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New York (city). Estimate and
" Apportionment, Board of. Committee
on School Inquiry
REPORT OF

COMMITTEE ON SCHOOL INQUIRY
BOARD OF ESTIMATE AND
APPORTIONMENT

CITY OF NEW YORK

Committee on School Inquiry

JOHN PURROY MITCHEL

President of the Board of Aldermen

WILLIAM A. PRENDERGAST

Comptroller

CYRUS C. MILLER

President of the Borough of the Bronx

VOLUME TWO

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CITY OF NEW YORK

1911-1913

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CORRESPONDENCE BETWEEN THE COMMITTEE ON SCHOOL
INQUIRY, PROF. PAUL H. HANUS AND DR. FRANK V. THOMP-
SON, RELATING TO THE REPORT OF DR. THOMPSON.

Letter from the Chairman of the Committee on School Inquiry to Dr. Frank
V. Thompson proffering questions.

AUGUST 13, 1912.

DR. FRANK V. THOMPSON,

*Assistant Superintendent of Schools,
Boston, Mass.*

DEAR SIR:—The Committee on School Inquiry, after reading the galley proof of your report rendered to it, feels that the report might be strengthened in certain particulars, as to which it desires to offer you the following suggestions with the request that you supplement the report as indicated. If you are able to amend and supplement the report as desired, the Committee requests that you be good enough to forward to it typewritten amendments to the galley proof now in hand, which the Committee will then transmit to the printer for new galley.

1. Kindly give a statement of your method of investigation.
2. Will you please give full and complete data for commercial high schools and commercial courses offered in New York City, showing the number of schools, the number of subjects offered, the number of teachers by schools and by subjects, and the number of pupils by schools and by subjects?
3. Will you please state what schools you visited and the number of recitations you attended, the length of time spent by you in each school and in each recitation, the number of principals and teachers interviewed by you in each general and specialized school?
4. Will you please make a comparison in tabulated form, between the curriculum offered by the High School of Commerce in Manhattan, and the curriculum recommended by you? We would like such comparison to show courses required in one curriculum and not required in the other; the courses elective in one curriculum and not elective in the other; and the courses offered in one curriculum and not offered in the other.
5. In your suggested curriculum will you please indicate, if possible, the new content you would give to old subjects: for example, history, civics, etc.?

6. Will you please state how the Regents are to maintain supervision over commercial courses if they discard examinations?

7. Will you please indicate how many of the quotations from statements by New York High School principals are from written communications and how many from verbal communications, and whether the written statements of principals are filed with the working papers left with the Committee on School Inquiry?

8. Is the statement that "commercial students get but little related academic work" (galley 112) based upon your analysis of the syllabus advertised, or upon your observation of class room instruction?

9. Please state in how many schools employment bureaus and follow-up systems are reported (galley 113), and what results have been reported in schools other than the Commercial High Schools just mentioned.

10. Please re-word the headings of the last two tables (the first on galley 114 and the second on 115) to indicate just what is meant by "15 per cent. clerical."

11. Please word your reference to the constant ratio of clerical work (on galley 115) so that it will exactly fit the illustrations given above.

12. Is the criticism that "Commercial law suggests a degree of maturity which cannot be assumed in the second period in education," based upon the amount of commercial law offered and the manner of teaching it which now prevails in Brooklyn schools, or is the subject necessarily too difficult for high school pupils?

Please be good enough to let me know by return mail how soon I may expect from you the material requested.

Respectfully,

JOHN PURROY MITCHEL,

Chairman, Committee on School Inquiry.

Letter from Dr. Frank V. Thompson answering letter of the Chairman of the Committee on School Inquiry, proffering questions.

BIRCH ISLAND, ME., AUG. 22, 1912.

MR. JOHN PURROY MITCHEL,
Pres. Board of Aldermen,
51 Chambers St., New York.

DEAR SIR:—I have your letter of Aug. 13. In reply I would refer you to Prof. Paul H. Hanus, in charge of the educational aspects of the inquiry. I should be pleased through Prof. Hanus to improve my report in any way possible.

Very truly yours,

F. V. THOMPSON.

Letter from Dr. Frank V. Thompson answering questions proffered in the letter of the Chairman of the Committee on School Inquiry.

THE SCHOOL COMMITTEE OF THE CITY OF BOSTON

OFFICE OF THE BOARD OF SUPERINTENDENTS

Mason Street

SEPTEMBER 24, 1912.

PROFESSOR PAUL H. HANUS,

*Harvard University,
Cambridge, Mass.*

DEAR PROFESSOR HANUS:—In accordance with my understanding that the special investigators deal directly with you in answering queries arising from our reports I send you my answers (with comments) to questions sent me under date of August 13 over the signature of John Parroy Mitchel. I shall answer seriatim the questions proposed, and shall summarize and classify the questions themselves in accordance with your suggestion contained in your letter of September 16th.

Question I. "Kindly give statement of your method of investigation."

Answer. By reading written reports, such as the annual reports of the city superintendent, authorized courses of study, state syllabi, reports of high school organizations; by visits to the schools concerned; by conference with the principals, chairmen of commercial departments and teachers of commercial subjects. Questionnaires addressed to the principals were employed. An important part of the investigation was made through the Chamber of Commerce, chiefly by means of a questionnaire sent to business men, and further by means of a general meeting of the Chamber of Commerce devoted in full to the consideration of the topic of commercial education. (See Chamber of Commerce Bulletin, March, 1912.)

Each school maintaining commercial courses was visited at least once, most of them twice and two schools oftener; one school was visited four times.

Question 2. "Will you please give full and complete data for commercial high schools and commercial courses offered in New York City, showing the number of schools, the number of subjects offered, the number of teachers by schools and by subjects, and the number of pupils by schools and by subjects?"

Answer. I am unable to furnish data upon these items other than those already contained in my report. My report contains in summarized form all the significant data suggested in the question. The minute data asked for in this question would in no way improve the report, but would tend to load it with significant statistics.

Question 3. "Will you please state what schools you visited and the number of recitations you attended, the length of time spent by you in each school, and in each recitation, the number of principals and teachers interviewed by you in each general and specialized school."

Answer. This question is answered in part under question one. In my diary I have complete accounts of each day's work. If a specific answer to this question is insisted upon I feel confident that I can show that a thorough field study of school conditions was honestly made.

Question 4. "Will you please make a comparison, in tabulated form, between the curriculum offered by the High School of Commerce in Manhattan and the curriculum offered by you? We would like such comparison to show courses required in one curriculum and not required in the other; the courses elective in one curriculum and not elective in the other; and the courses offered in one curriculum and not offered in the other."

Answer. I should be perfectly willing to make such a tabulation for the purposes of the Committee but I should be unwilling that it be printed as a part of the report. This parallel method would not strengthen my report but would serve to cause prejudice against it. Broad comparisons between New York courses of study and a recommended one are made in the report. I believe this method to be a better one than that suggested. The main object of my report was to outline the proper conception, spirit, and direction of commercial education. The matter of courses of study is important but not the dominant issue involved.

Question 5. "In your suggested curriculum will you please indicate, if possible, the new content you would give to old subjects: for example, history, civics, etc.?"

Answer. The report already contains such indication. Further indication would not strengthen the report.

Question 6. "Will you please state how the Regents are to maintain supervision over commercial courses if they discard examinations?"

Answer. By the method of inspection and approval. The Regents at

present do not offer written examinations in certain vocational subjects, such as household arts. The methods now used by State Commissions in approving industrial schools and courses are suggestive of the proper procedure. The answer to this question is indicated in my report.

Question 7. "Will you please indicate how many quotations from statements by New York High School principals and from written communications, and whether the written statements of principals are filed with the working papers left with the Committee on School Inquiry?"

Answer. Practically all the quoted statements of principals are signed statements. There may be in the report one or two briefer quotations which were taken stenographically by me. These signed statements are now in my possession.

Question 8. "Is the statement that 'commercial students get but little related academic work' (galley 112) based upon your analysis of the syllabus advertised, or upon your observation of class room instruction?"

Answer. Upon both, also upon the frank admission of principals and teachers. This statement will hardly be challenged by any one who knows the conditions.

Question 9. "Please state in how many schools employment bureaus and follow-up systems are reported (galley 113), and what results have been reported in schools other than the Commercial High School just mentioned."

Answer. All high schools have at least some rudimentary form of employment bureau or follow-up system. For the purposes of the report the treatment given to these topics is sufficiently comprehensive. The report commends the extension of this kind of work and warns against some dangers, e. g., coöperation with typewriter companies.

Question 10. "Please re-word the headings of the last two tables (the first on galley 114 and the second on 115) to indicate just what is meant by 15 per cent. clerical."

Answer. The term "15 per cent. clerical" is explained when first used; afterwards, to avoid needless repetition, the expression is used as a working term. A full reading of the report leaves no doubt as to the meaning of the expression.

Question 11. "Please word your reference to the constant ratio of clerical work (on galley 115) so that it will exactly fit the illustration given above."

Answer. I do not clearly comprehend the intent of the question. The term "15 per cent. clerical" does not mean that all business organizations show uniformly the same ratio. The range is between 13 per cent. and 17 per cent., dependent upon the business. I admit that the term

"average ratio" is better than "constant ratio." The correction was made in the first galley proof.

Question 12. "Is the criticism that 'Commercial law suggests a degree of maturity that cannot be assumed in the second (secondary?) period in education,' based upon the amount of commercial law offered and the manner of teaching it which now prevail in Brooklyn schools, or is the subject necessarily too difficult for high school pupils?"

Answer. In three year commercial courses the time devoted to so-called commercial law can better be devoted to some other vocational commercial subject. I have advised a brief study of commercial law for a part of the fourth year work in the recommended course of study. The term is too pretentious for any adequate achievements in this subject in a secondary school. In correcting first galley proof a change was made and the term commercial law is stated as a commercial procedure, with an explanation in a footnote calling attention to the necessary limits of the subject for immature students. I found no objection to the manner of teaching the subject in Brooklyn schools and my treatment in no ways suggests unfavorable criticism of the actual teaching.

Very truly yours,

F. V. THOMPSON,
Assistant Superintendent.

Classification of Questions asked by John Purroy Mitchel (according to schedule furnished by Prof. Paul H. Hanus in a letter to the specialists dated September 16, 1912).

- a—one—question 4.
- b—two—questions 1 and 3.
- c—six—questions 5, 6, 8, 9, 10, 11.
- d—one—question 2.
- e—one—question 12.
- f—one—question 7.

This question f is peculiar and cannot be classified under a, b, c, d, or e. This question seems to challenge my capacity as an investigator, which aspect I do not choose to discuss.

F. V. THOMPSON.

Supplementary letter of Dr. Frank V. Thompson in re letter of the Chairman of the Committee on School Inquiry dated August 13, 1912.

Nov. 19, 1912.

MR. PAUL H. HANUS,
Harvard University,
Cambridge, Mass.

DEAR MR. HANUS:—I note on re-reading the galley proof that the term "constant ratio" is not my conception at all, but is a term used by the Committee. On my questionnaire sent to business men I used the following question:

"The relative number employed in each class, e. g., 15 per cent. clerical, etc."

This question sent to business men was merely tentative and was suggestive of a possible and probable proportion of employees engaged in clerical capacities. In order to clear up any misunderstanding of the matter I have had a footnote of the following nature:

"These replies reprinted as received from business houses."

Whenever I speak of the ratio of clerical employees I qualify the expression with the words "about" or "approximately."

If there yet remains anything further to do regarding the nature of material furnished by me, be sure to let me know so that I may make amendments to your satisfaction.

Sincerely yours,

F. V. THOMPSON,
Assistant Superintendent.

REPORT ON
EDUCATIONAL ASPECTS OF THE
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY
OF THE BOARD OF ESTIMATE
AND APPORTIONMENT

PART II

Subdivision III

High Schools

SECTION B.—COMMERCIAL HIGH SCHOOLS AND COMMERCIAL
COURSES IN HIGH SCHOOLS

BY

FRANK V. THOMPSON, PH.D.

Assistant Superintendent of Schools,
Boston, Mass.

CITY OF NEW YORK
1911-1912

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B. COMMERCIAL HIGH SCHOOLS AND COMMERCIAL COURSES IN HIGH SCHOOLS

Section I

Scope and Aims of the Report

The scope of this report comprises a description of commercial education in the City High Schools; an analysis and summary of existing conditions, and certain constructive recommendations. In the third section, devoted chiefly to recommendations, will appear most prominently the aim of this particular investigation, namely, a suggestive program of procedure toward more efficient means and methods of commercial education.

High Schools Maintaining Commercial Courses

Of the twenty high schools (in 1911-1912) maintained by the Board of Education, thirteen offer commercial courses. Two high schools for boys—the High School of Commerce, Manhattan, and the Commercial High School, Brooklyn—devote exclusive attention to commercial instruction.

The eleven other schools, known as general high schools, offer elective commercial courses, and about 40 per cent. of the pupils are found in these courses. In view of the fact that there are special commercial schools for boys and none for girls, it is not surprising that in the general high schools the ratio of boys to girls is one to five. In the City at large the sexes elect the work in practically equal proportions.¹

The geographical distribution of schools with respect to residential needs is deserving of commendation. Manhattan has a High School of Commerce for boys and a commercial course for girls in the Washington Irving High School. The Bronx has a general high school with an elective commercial course for boys and girls. Richmond has a general high school with a commercial course for boys and girls. Brooklyn has a special school for boys (Commercial High School), and a commercial course for girls in the Eastern District High School, and in addition Bushwick High School offers courses for both boys and girls. In Queens there are six general high schools offering commercial courses for both boys and girls. No restriction in selecting high schools is placed on pupils who may attend schools outside their residential districts. Of the whole high school population approximately one-third are enrolled as commercial pupils.

¹ Dr. J. J. Shepard, *Chamber of Commerce Bulletin*, March, 1912.

Courses of Study

A general survey of courses offered in the City high schools, both general and special, reveals the following facts:

General high schools usually offer three-year commercial courses, though there are two exceptions—Curtis, which has a four-year course, and Bryant, which differentiates and offers a four-year course for boys and a three-year course for girls. The High School of Commerce has a four-year course, while the Commercial High School of Brooklyn maintains a dual offering of a three-year course and a four-year course.

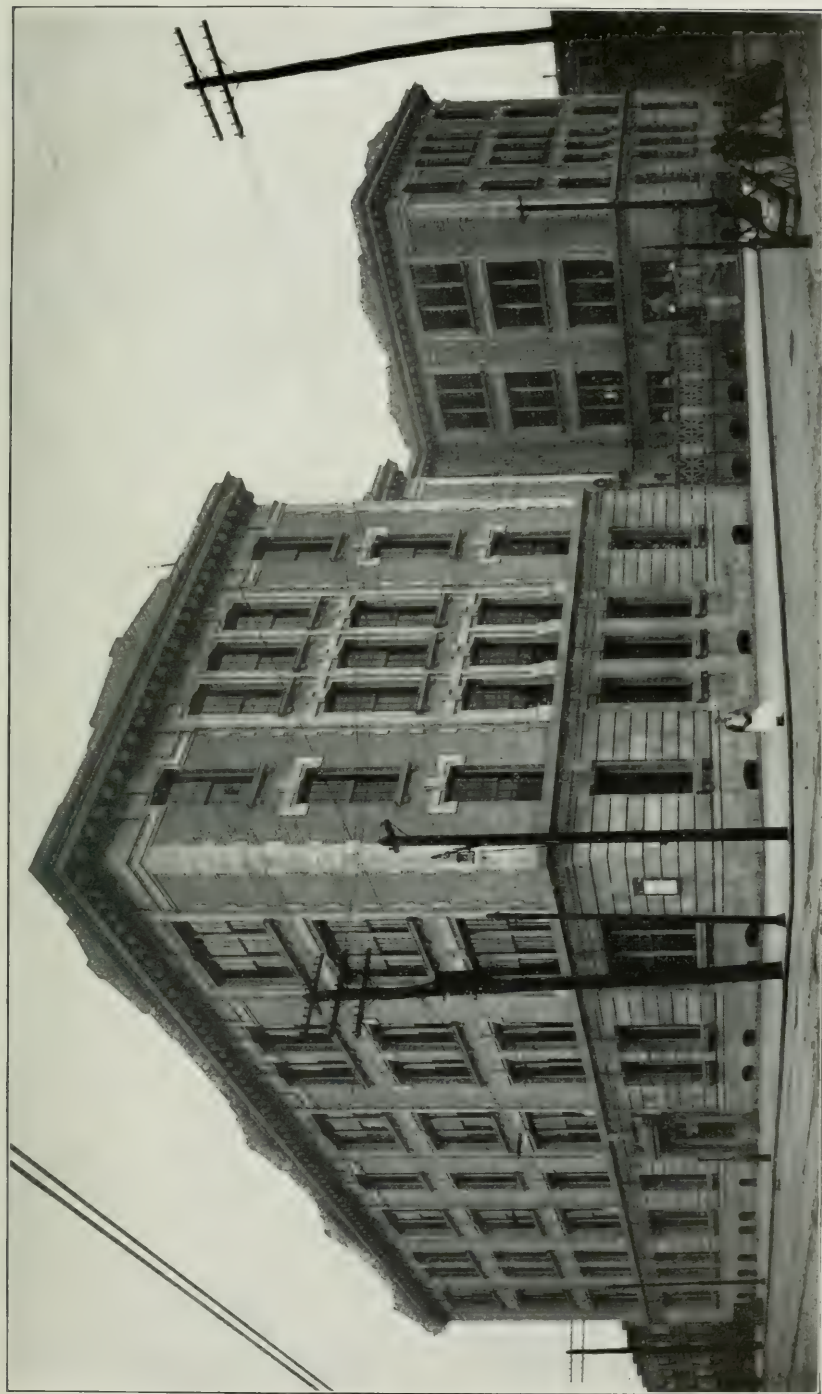
The courses in general high schools are largely clerical in nature—bookkeeping, business arithmetic, stenography and typewriting—courses which have traditionally been assumed to constitute the chief elements of commercial training. In the two boys' high schools (High School of Commerce, Manhattan, and Commercial High School, Brooklyn) these same subjects appear largely, though there is added work in commercial sciences, in commercial foreign languages, and in economic subjects. In all the schools a certain measure of "liberal" training accompanies specialized work, a foreign language being a general requirement. Specialized work is preponderant in the three-year courses of the general schools, and "liberal" subjects are found in greater proportion in the special schools.

Character of Pupils

The character of pupils, social, economic, and intellectual, may profitably be mentioned in this general survey of the subject. The usual testimony of the principals of general high schools is to the effect that commercial pupils constitute the less desirable element of the school. "Pupils electing the commercial course are of inferior intellectual power." "Doubtful if pupils are of as good mental ability as those of other courses." "Less serious and sturdy character." "Students in commercial course inferior in ethical standing, inferior intellectually and socially." "They are not so good mentally. Many choose the commercial course because they think it is easy and because they had trouble in getting through the grammar school." "Character slightly below." Conditions seem to be better in the two special high schools for boys, and in one general high school for girls. In this last school the principal reports that commercial girls are brighter and more intelligent than academic girls.

Persistence of Pupils

The persistence in membership of commercial pupils seems to be markedly lower than the average. The average loss of membership for the City for the past five-year period is 31 per cent. annually. The High School of Commerce in the last seven years has lost an average of 36.7



THE COMMERCIAL HIGH SCHOOL, BROOKLYN.

Two high schools, the Commercial High School in Brooklyn and the High School of Commerce in Manhattan, both for boys only, devote exclusive attention to commercial instruction.



per cent.; the Commercial High School of Brooklyn, 41 per cent. for the years 1909-1910. Every school reports a larger percentage of loss of commercial pupils than the city average or the school average. The Washington Irving High School reports the highest percentage of membership, where 46 per cent. of commercial girls persisted until the third year, against 47 per cent. of girls pursuing academic work.

One apparent reason for greater loss of membership is the character of the pupils mentioned in the foregoing paragraphs. Principals assign various other reasons: "Attractive openings come to them long before the course is completed; so long as business men are content to employ young people only partly prepared, so long will the schools have difficulty in holding their pupils to the end of the course." "Many elect commercial courses who do not expect to remain long." "Pupils who cannot stay in school long take the commercial course." A noticeable feature is the fact that boys are less persistent in all schools than girls. A suggestive reason for this is found in the testimony of one principal, who says that a boy can get a job because he is a boy, but a girl must possess training. Frequently a family close to the economic line of necessity will call upon the boy to make the sacrifice of schooling. In all high schools the total number of boys and girls entering is nearly equal; the number graduating in 1911 shows about two girls for every boy.¹ The "mortality" among boys in New York City high schools is apparently twice that of girls, and the "mortality" of boys in commercial courses is greater than that in other courses.

How Pupils Choose Commercial Courses

Investigation showed that boys and girls select the commercial course as follows: The greater proportion of pupils make the selection the final term of the elementary school. Circulars describing the offerings of high schools are distributed. The principals and graduating class teachers discuss with the pupils the significance of the printed data, and the children take the circular home for the signature of the parents. High school principals report that some elementary school principals call meetings of the parents for discussion and conference. High school principals feel that they have little influence on or control over the selection of courses. In one high school (Washington Irving High) the course of study delays for one year the beginning of specialized subjects. During this period the child is subjected to a trying-out process; study of the tastes and aptitudes is made by teachers, and the kind of choice is influenced by this process. Another principal of a mixed high school (Bushwick) gives particular attention to the question of a proper choice made in the elementary school.

High school principals in the main believe that there are shortcomings in the character of the guidance given to pupils. "Little attention

¹ Annual Report of City Superintendent, 1911, p. 98.

is given to vocational guidance. Pupils ought to select after one or two years in the high school. Individual tendencies could then be determined." Principals state that pupils are unconsciously sorted into groups with respect to mental ability. In Manhattan and The Bronx the pupils of best mental attainments are said to go to Townsend-Harris Hall, connected with the College of the City of New York. Further, the testimony of principals is that the brighter pupils take academic work, with Latin as a major; that the next in mental grade take general work with modern languages, and that those remaining take commercial subjects. There is discoverable no carefully organized effort, such as is found in several American cities,¹ to give vocational guidance in the elementary school, so that pupils are directed to the course most suited to their abilities and subsequent needs. One principal reports improvement in these conditions: "A better quality of students are selecting the course. Time was when the commercial department was looked upon as a suitable place for students unfitted to do the hard work of the regular course. To-day an increasing number of bright, well-qualified young people are definitely choosing the commercial course."

Teachers of Commercial Subjects

Teachers of commercial subjects in all high schools come into the service by qualifying by examination upon one of two merit lists, known respectively as the Stenography and Typewriting list, and the Commercial Subjects list. By commercial subjects are understood chiefly those clerical in nature. The general requirements of experience are somewhat similar to those of other candidates; there is, however, the provision that business experience may be counted year for year (not exceeding five years) for the required experience of all teachers. A commercial teacher is, consequently, one who instructs in some clerical art, such as bookkeeping, stenography, or typewriting. It may be pointed out here, though more specifically treated in the third section of this report, that the present system makes no provision for securing teachers to instruct in commercial English, commercial modern languages, or in subjects dealing with fundamental commercial sciences, such as economics or business organization. The requirements for commercial teachers, *under the limitations noted*, are well suited to secure efficient and trained teachers.

Inspection of the work of commercial teachers showed a general good level of achievement. Some complaint was made that under the requirements elementary school teachers may acquire a knowledge of a system of stenography, secure a license in stenography and typewriting, and become a commercial teacher without adequate practical experience. In such a special school as the Commercial High School of Brooklyn the large majority of the teachers have had no training in

¹ Boston has a well-developed plan of vocational guidance.



HIGH SCHOOL OF COMMERCE, MANHATTAN.

This school offers a four year commercial course for boys.



business nor in business methods. They have come from the general lists, and have been assigned to their present position because of the system which demands that eligible candidates shall be chosen in the order of their rating, and from requirements which seek to secure teachers for other types of high schools. It is consequently not surprising to find in special schools a considerable number of teachers who have no other sympathies and use no other methods except those characteristic of a classical or academic high school. The vocational stimulus cannot fail to lose force in a special school where the largest influence comes from teachers who are not themselves imbued with the aims for which the school really stands.

A study of the teaching assignments of commercial teachers shows a proportionately larger number of teaching periods than the average.

Regents' Examinations

Commercial as well as academic work is standardized by State syllabi and tested by the regents' examinations. This system tends to produce a certain degree of uniformity of subject matter and achievement. All the high schools except the High School of Commerce report adherence to the State syllabi and regents' examinations. The High School of Commerce takes the regents' tests in stenography and typewriting; for all other subjects local examinations, approved by the Board of Superintendents, are employed.

The regents' examinations make no provision for "academic" subjects related to commercial training, except one course called Commercial English and Correspondence. This course is designed to be given "in the last year of the course, when the pupil has had training in English composition and literature."¹ It forms hardly a complete course in itself, but constitutes a supplementary part of a separate English course pursued simultaneously. Sometimes an additional two periods a week are assigned and a teacher in the commercial department gives the instruction. Commercial pupils are not usually required to take this special English course to secure diplomas. The majority of general high schools maintaining commercial courses do not even offer it.

Relation of Academic to Vocational Work

It is a fair statement to say that commercial students get but little related academic work. The English courses of three-year commercial pupils are uniformly those of academic or college preparatory character, and, seemingly without any reason, these courses are incomplete in themselves, since they constitute but three-quarters of a course designed for four-year pupils. The mathematics, modern languages, and science

¹ State syllabus, 1910, p. 359.

are those designed to meet regent requirements, which in turn are planned to meet the traditional academic or college entrance requirements.

The individual plan of the High School of Commerce and, to a less degree, of the Commercial High School of Brooklyn (which reports using regents' examinations wherever possible) show a praiseworthy effort to make all the school subjects reflect the vocational purpose of the school. Several other schools are attempting to better adapt the general ("academic") subjects to the needs of commercial pupils, but the State system of requirements¹ makes such attempts difficult and usually ineffective. The significance of this state of affairs will be more fully discussed in a later section of this report.

Commercial Laboratories and Office Equipment

A commercial school necessarily has a laboratory with devices and equipment where the practice of clerical arts is carried on. This usually consists of rooms with typewriters, rooms fitted with bookkeeping desks, and places where model banks and filing cases are found. In most instances these appurtenances are adequate, though often used by noticeably large divisions of pupils. No shortage of commercial material is reported. There are often found too many pupils for the typewriters, though here the difficulty is lack of class room, not the disinclination of the authorities to furnish machines. The practice of having a commercial museum showing commercial processes and products has hardly begun. The High School of Commerce has the beginning of a museum which promises in time to develop in extent and adequacy. There is, with the present accommodations, little room for the expansion of the project.

Practice work connected with clerical subjects is noticeably intelligent and effective. Practical work of the standard required in business offices is approximated in a degree commensurate with the limitations of the number of pupils, space, and equipment. Most teachers showed that they possessed the requisite knowledge which they are able to impart concerning matters of business (clerical) technique. An exception in some schools to this statement was noted in the matter of penmanship. In the three-year courses penmanship seems to be slighted in order to secure more time for bookkeeping. One period per week for one term is insufficient in the case of the average pupil to assure the acquisition of a clear, legible, and rapid style of handwriting.

Placement of Graduates

Employment bureaus and follow-up systems are reported in practically all schools. Some of these are reasonably effective. All schools would like to expand these agencies; but lack of clerical assistance and

¹ Regents' Examinations.

lack of other opportunities render expansion difficult. As is to be expected, the two special schools lead in these important matters. The High School of Commerce has a valuable scheme of following up graduates, but reports difficulty in keeping track of many boys who move away, leaving no addresses. The Commercial High School of Brooklyn presents certain facts concerning its employment bureau, the purport of which is that business houses are circularized at the time of graduation, and that last year 250 boys in response to 412 requests for help were placed in employment. Suggestive data from other schools may be added to give a notion of the general condition. "We have a card index showing data regarding all graduates. Every graduate is now profitably employed as far as he cares to be." "The typewriter company places all our pupils." "Yes, being organized to operate with the work in typewriting." "Employment bureau practically abandoned for lack of help. No follow-up system for same reason."

Several schools report coöperation with typewriter companies in placing graduates. Placement is recognizably better in the control of the school, because coöperation with private commercial companies involves the obvious danger of subordination of social interest to private gain. It cannot be assumed that a typewriter company is always wholly disinterested in its efforts to find positions for commercial pupils.

Apparent Aim of Commercial Education

What is the current conception of commercial education? Some passing reference has been made to this matter, but a more specific account is desirable in order to complete the general description of existing conditions. The State syllabus (1910)¹ lists commercial subjects as follows: elementary and advanced bookkeeping, commercial arithmetic, business writing, commercial law, history of commerce, commercial English, and correspondence, shorthand, and typewriting. Not all of these subjects are required. The State diploma in commercial subjects is given to pupils who meet the general requirements in English, science, mathematics, and history, and pass department examinations with a grade of not less than 75 per cent. in the following subjects: advanced bookkeeping and office practice, commercial arithmetic, commercial law, commercial geography, commercial English and correspondence, and business writing. These requirements are only for pupils pursuing a four-year course. History of commerce is not found in the offerings of the three-year course of the general high schools. In both the High School of Commerce and in the Commercial High School is found the subject of economics, and in the former school the history of commerce. In the main, in all schools the majority of the commercial work is clerical. Facility in business (clerical) technique is the major aim. The

¹ State syllabus, 1910, pp. 334, 335.

courses of study are based upon the assumption that efficiency in clerical arts is the major desideratum in business preparation.

Section I has dealt with day school conditions exclusively. A description of evening school conditions and other forms of supplementary education affecting commercial training will appear in Section III in connection with the general body of recommendations.

Section II

Testimony of New York City Principals Concerning the Aim of Commercial Education

In the preceding section the attempt has been made to present in general terms the most important facts affecting the problem of commercial education. No effort has been made to pass final judgment as to the merits or shortcomings of the system. In this second section a more critical study will be made of the most important phases of the problem; but final constructive recommendations will be reserved for the third section of the report.

We may appropriately begin this section with a closer examination of the aim of commercial education as stated in the preceding section, namely, the assumption that efficiency in clerical arts is the major desideratum in business preparation. We shall first present additional evidence that the schools do make that assumption, and as evidence shall quote from statements of principals: "In our brief three-year course we are attempting to train students immediately for clerical positions." "The burden of the course is devoted to preparation for clerical work." "We plan to have our students (boys) equipped for what is usually the first step in business—a clerical job—but we feel that a commercial school of this type (four years) which did not have a higher aim than that would fall woefully short of its great opportunities." "In the past I fear that the conception of the work of the school has been somewhat that of a 'clerk factory' " (boys' school, four-year course). Particularly with respect to boys, the principals do not agree that the clerical aim is the proper one. Subsequently in this section of the report it will be shown that the courses of study exalt this aim even in the special boys' schools. There can be no doubt at all respecting the aim of the three-year courses.

Testimony of Business Men

The evidence of the business world is against the assumption that clerical training is the main objective of commercial education. Business men in particular do not assert that this conception is sound. Through the courtesy of the New York Chamber of Commerce some evidence bearing upon this point was secured during February and March of the current year (1912). The following circular letter was

sent to about a hundred of the largest commercial houses of New York City:

1. In the selection or promotion of your employees in any department of your business, do you set any educational standards, such as graduation from grammar school, high school, or college, as a requisite for employment?

To what extent?

2. Do you encourage employees to continue their education, either by attendance upon night schools or by any other means?

By what methods?

3. Do you perceive any defects in the present business training given in our high schools?

If so, what defects are most striking?

4. Do you advise the study of foreign commercial languages? If so, please check in the order of importance the following: German, French, Spanish, Italian, Portuguese.

5. For a young man entering your employ which of the enumerated clerical subjects is it necessary to know—stenography, typewriting, bookkeeping? Would a study of the fundamental principles of business, such as merchandising, advertising, salesmanship, business organization, be more valuable to young men than specialization in clerical subjects?

6. Should schools of commerce attempt to train for particular types of business, e. g., merchandise, transportation, banking, etc.?

7. It is manifest that to fulfill its best purposes commercial education should keep in constant touch with the business world and advance with the evolution of mercantile development. What methods can you suggest of promoting such a relation between the public commercial schools and the business interests of the city?

(Comments at length or suggestions of any nature will be welcomed.)

The answers to Question 5 have a particular bearing on the point we are now considering. On the basis of fifty replies received up to the time of tabulation, "fundamental principles of business" is chosen over clerical arts in the ratio of nine to one. This same study was made in Boston in 1906, and in Pittsburgh in 1909, and with somewhat similar results respecting the relative importance of fundamental and of clerical subjects.

The following quotation is taken from the report of Edward Rynearson, Director of High Schools, Pittsburgh, Pa., and contained in the May number (1910) of the *School Review*. The second part of Question 5 differs from the New York City question as follows: "What other lines of training will be more valuable as a preparation for a business career in your house?"

"Of those replying 32 per cent. think that bookkeeping alone is essential; 28 per cent. state that all three are necessary; 19 per cent. think that none of the three subjects is essential; 15 per cent. think that penmanship is essential; 11 per cent. think that mathematics is necessary; 11 per cent. consider a knowledge of good English indispensable; 8 per cent. think that arithmetic is valuable; 4 per cent. state that typewriting and bookkeeping are necessary; 3 per cent. think that designing and advertising are valuable."¹

A few quotations from typical replies from New York business men may be added here: "We employ no male stenographers. Occasionally we can use a business school graduate in our bookkeeping department. The study of business principles ought to be of value." "For the majority of positions in our employ we should prefer that he had a knowledge of the other subjects named by you." "A knowledge of stenography and typewriting would be necessary in filling certain positions where a male stenographer was desired. In our particular business a knowledge of bookkeeping as it is generally taught in high schools might in some cases be helpful, but hardly ever absolutely necessary. A study of the fundamental principles of business, such as merchandising, advertising, salesmanship, and business organization, would in general seem to be more valuable to young men than specialization upon clerical subjects."

Figures from the Permanent Census Board

As a second and different kind of evidence, we present the following:

At the time of preparing this report (April, 1912) Mr. George H. Chatfield, Secretary of the Permanent Census Board, had prepared a report covering the occupations of 66,617 boys and 65,191 girls in New York City between the ages of fourteen and eighteen. As stenographers and typewriters were found 586 boys and 3,244 girls; as bookkeepers 824 boys and 1,364 girls; errand boys and girls fall into the proportion of 12,529 boys and 1,204 girls. Here is seen the specialization of occupation by sex and the preponderant number of girls in clerical positions.

Evidence Drawn from Business Organization

Additional evidence, differing in character from that given above, may be seen in the analysis of the organization of a New York business house having an average of 5,100 employees:

¹ This evidence shows that business men in Pittsburgh do not consider that clerical subjects are of chief importance in commercial preparation.

Organization of a Retail Dry Goods House ¹

	Number Employed.	Per cent. of Total Force.
Managerial	120	2.3
Buyers	130	2.5
Salespeople	1,900	37.0
Stenographers	70	1.3
Clerical	360	7.1
Inspectors	250	4.9
Stockkeepers	120	2.3
Bookkeepers	190	3.7
Auditors	90	1.7
Delivery	550	11.0
Porters and Cleaners	180	3.5
Messengers (Junior)	160	3.2
Cadets (Junior)	260	5.1
Factory hands	500	9.8
Elevator Operators	60	1.2
Mechanics	160	3.1
	<hr/> 5,100	<hr/> 99.7

A grouping from the above figures of positions which may be considered clerical (stenographers, clerical, bookkeepers, auditors) shows 13.8 per cent. Compare this figure with the combined items, buyers and sellers, 39.5 per cent., and the result is significant. Certainly clerical training does not prepare immediately for the largest section of commercial employment, namely, *selling*.

Below are added organization figures of three other business houses.

Organization of a Retail Dry Goods House (Boston) ¹

1. Approximate number of employees, 967.
2. Classification of employees, e. g., managerial, buyers, salesmen, clerical, etc.

Buyers and Assistants	54	Alteration	} 117
Managerial	77	Piece Workers	
Sales	311	Manufacturing	
Stock	90	Repairers	} 42
Floor Assistants	28	General Receiving and Delivery De-	
Cashiers	56	partments	16
Clerical	116	Shoppers and Foreign Representatives	53
Decorators	7	Maintenance	

3. The relative number employed in each class, e. g., 15 per cent. clerical, etc.:

Buyers and Assistants	5.6	Alteration	} 12.
Managerial	7.9	Piece Workers	
Sales	32.2	Manufacturing	
Stock	9.3	Repairers	} 1.7
Floor Assistants	2.9	General Receiving and Delivery De-	
Cashiers	5.8	partments	5.5
Clerical	12.0	Shoppers and Foreign Representa-	
Decorators .....	.7	tives	
		Maintenance	

¹ These replies reprinted as received from business houses.

Insurance Business, New York, with 15,488 Employees ¹

What percentage of the whole organization does each class of employees represent—e. g., 15 per cent. clerical?

	Per Cent.
Superintendents	2.10
Assistants	9.38
Agents	57.86
Inspectors .....	.16
Managers .....	.04
Helpers .....	.59
Assistants .....	.61
Bookkeepers	4.53
Clerks	12.44
Stenographers	2.95
Typewriters	5.22
Telephone Operators .....	.03
Electricians .....	.16
Engineers .....	.31
Porters and Cleaners	1.98
Commissariat help .....	.79
Printers .....	.78

Wholesale Dry Goods House, Boston, 365 Employees ¹

The relative number employed in each class, e. g., 15 per cent. clerical, etc.:

	Per Cent.
Managerial	2
Buyers	6
Salesmen	24
Clerical	19
Stock hands	25
Packers	4
Sorters and callers	7
Entry Clerks	4
Watchmen, loft men, elevator men, etc.	6
Carpenters and Repairs	2
Engine	1

Figures from other business organizations show approximately the same ratios with a single exception, that of a bank, where the greatest proportion of employees serve in clerical capacities.

Transfers in Business

Do commercial employees begin in the clerical position and transfer into other departments? Evidence is strong that such a transfer is not the usual procedure. From the replies of business men the following are offered as typical answers: "If he enters the office it would be most desirable to know bookkeeping. If in the store, merchandising. We employ women stenographers." "We employ experts in the three subjects mentioned, but a knowledge of stenography and typewriting is necessary only to those employed in that department." "We do not make it a condition, in the case of young men entering our employ, to

¹ These replies reprinted as received from business houses.

be familiar with stenography, typewriting, or bookkeeping, unless they are specifically employed to do one of the three kinds of work."

The objection may be raised that the statistics presented above deal only with large business organizations, and that facts relating to small businesses are not considered. It is safe to assert that the same ratio of clerical work is fairly constant whatever the size of the business may be. It is admitted that a boy entering a small business where he will be called upon to perform varied duties will need to have some facility in clerical arts; but he will need more to have in addition other training if he is to be as generally useful as possible. If an individual, unaided, could carry on one complete business, the percentage of his time devoted to the different activities of commerce would approximate the proportions indicated in the examples above. The major efforts of this individual would be in the competitive department of the business; and, if he could acquire by training facility in but one business operation, the essential art would be buying and selling, not keeping books.

Evidence from the Vocation Bureau of Boston

The Vocation Bureau of Boston, in a recent bulletin (1912) dealing with the subject, "The Department Store and Its Opportunities for Boys and Young Men," presents a suggestive body of confirmatory evidence. Extract from pages 81 and 82:

"The most usual lines of promotion and transfer for boys may be best shown by actual examples in one of the large stores, among those investigated, for the month of July, 1911, there being from one to six cases of each of the following: Floor boy to retail office; floor boy to shipping room; office boy to stock boy; office boy to time desk; errand boy to inspector; errand boy to truckman; stock boy to teller; inspector to retail office; inspector to mail order department; inspector to receiving room; inspector to stock boy; inspector to examiner; inspector to busheling room; inspector to adjustment office; truck to salesman; truck to inspector; truck to office; stock boy to salesman; elevator boy to salesman; elevator boy to salesman in the bedding section. To this may be added a few cases of young men during the same time and in the same store: Salesman to floor superintendent; cashier to retail office; assistant buyer to buyer in the hosiery department; salesman to overseer of juvenile help; assistant buyer of silks to be manager of a millinery house of an outside firm; from the stock office of the store to the Department of School Supplies of the City of Boston, through a civil service examination."

There are several instances of transfer here from the clerical side of the business to other functions, but these illustrations do not show that initial entrance into the clerical side of the business is the essential or usual prerequisite step to liberal business opportunities, which is the present mistaken assumption of most commercial teachers.

Commercial Education for Girls

The burden of the evidence above deals with the boy situation, but there is solid ground for the inference that a similar condition exists with respect to girls. The deduction is proper that familiarity with clerical processes is not a prerequisite for general commercial employment. Clerical training for the girl is more appropriate because a much larger proportion of girls find employment in clerical positions, but clerical training for girls is not a preparation for the larger proportion of opportunities in business houses.

The School Trains Clerical Employees Chiefly

The reason why school principals conclude that clerical training is most desirable from the character of the requests of business men is because commercial schools have acquired a reputation for training clerical help. When the business man wishes a clerk he applies to the "business" school; when he wishes a boy or girl for other departments of his business he does not so apply. One of the New York City principals makes a proper inference in the following: "In placing boys in positions after they are graduates, our experience has been that the largest demand is for boys equipped with stenography and typewriting; the next largest for those who are accurate in figures; the third for those with general horse sense; and, lastly, for bookkeepers. Such facts seem to justify the theory that typewriters are mainly in demand, but this might be met by the statement that, if business men *knew* they could get from us graduates who, without stenography and typewriting, are fitted for more important things, they would seek from us such young men."

It is entirely possible that every boy graduate of New York commercial schools might enter business in a clerical capacity, and that subsequently the majority might transfer to other and more promising departments; and yet the position maintained in this report remains true; because the schools as yet train but a small proportion of the pupils who go into business. The historic example of a Cortelyou who became a cabinet member by reason of his knowledge of stenography has led too many educators to conclude that the royal road to success lies through the same path.

Studies in business organization made in connection with this report¹ show a range of 13 per cent. to 19 per cent. engaged in clerical work, and that transfer from clerical departments to other departments is unusual. The evolution of success is usually within the department of original entrance; that is, the boy who enters the bookkeeping department advances in that department, and the boy who enters on stock usually becomes a salesman. The chances of a high grade of remuneration in the clerical department, except at the head, are relatively less than in the competitive side of business, and the likelihood of upward growth is relatively less. If we should adopt Dean Schneider's classification of occupations as energizing and enervating,² clerical training will certainly come closer to the second, though probably not at all to the degree which is found in industry.

The Narrow Aim of Present Day Commercial Education

It is a fair inference that commercial education with its present limited objective is aiming at the preparation of boys and girls for approximately 15 per cent. of the demand for commercial employees. This fraction represents an important and integral part of business needs. Because it is the lesser part, it should not be neglected. As indicated in Section I, this part is done well, and we can suggest little in the way of improvement.

Where the Majority of the Business Recruits Come From

What about the other 85 per cent. of commercial employees? From what sort of training do beginners in the other departments of business come? We do not know definitely. The answer to this question could not be undertaken within the limits of this investigation. We shall suggest in Section III of this report (p. 57) how further evidence bearing upon the question may be secured, but we have some facts and surmises that are suggestive. First, it must be admitted that in many businesses a certain proportion of positions cannot have appropriate training in a secondary school because of the immaturity of high school pupils. The large percentage of college graduates who enter business each year shows how certain positions are filled. Again, the number of commercial schools of collegiate grade is becoming considerable, and the graduates of these institutions enter business very rarely in clerical capacities.

The Standards Set by Business Men

Question 1 of the letter of inquiry sent to business men has a bearing upon the question now under consideration. Business men, as a rule, do not set educational standards even for clerical employees, al-

¹ By the New York Chamber of Commerce and Boston Chamber of Commerce, pp. 15, 16.

² See his report.

though for a clerical position specific clerical ability is often sought. For all other positions, which constitute about 85 per cent. in the average business house,¹ only general qualifications are indicated, such as good appearance, good family, good credentials. The following are some typical answers to Question 1: "No. Each applicant stands on his own merits but it goes without saying that a well educated young man always has the preference." "We have no exact educational standards. We examine applicants in elementary arithmetic and spelling. Naturally we give preference to applicants with the best educational equipment, but very often our beginners (boys of 16 and 17, girls of 17 and 18 years of age) have only a grammar school training." "Juniors are engaged by reason of personal appearance, aptness, and general intelligence. It often happens that graduates are not as bright nor as intelligent nor as adaptable as those who have not graduated."

Again we present results from Pittsburgh as corroboratory evidence:

"Of those replying, 28 per cent. set no educational standards; 40 per cent. prefer high school graduates (3 per cent. of these preferred high school graduates to college graduates); 14 per cent. are of the opinion that the more education the better; 8 per cent. require only common school education; 6 per cent. prefer commercial education; 1 per cent. prefer technical school education; 1 per cent. require 'brains,' not 'diplomas'; 1 per cent. consider prime requisite 'congeniality.' 'I would not overlook the most essential of all requisites, and those are good deportment and personal tidiness, which are of the utmost importance and carry great weight.'"

We infer from the opinions of business men two things:

(1) That clerical training is not a prerequisite for employment, except for clerical positions, nor at present is any other kind of specific commercial training sought as an alternative.

(2) As far as the testimony of business men goes, the results are mainly negative; there has been no clear formulation of principles to guide commercial schools.

It is likely that, even in the case of clerical positions, the majority of beginners enter without preparation and are trained in the business houses. For, while clerical training aims at about 15 per cent. of the openings, by no means do the special schools fill this proportion of the places. So of necessity the great majority of business positions are filled by boys and girls who come from elementary schools, the general, manual training, and classical high schools, private schools, and colleges. It is significant that business men do not point out any superiority of the commercial school product over the general school prod-

¹ Pages 15, 16.

uct. We cannot escape the conclusion that the non-commercial schools have a larger influence in the sum total upon business than do the special schools, and it is an open question whether or not the general school is not giving at present more appropriate training for the major business needs. The pupil in the general high school does not get false impressions concerning business demands; he is not led to believe that clerical ability is the one essential, and in applying for a position he does not seek office work as the only business opportunity. The issue raised here will be constructively dealt with in the third section of this report.

It is evident that business men have had no choice of an alternative, for commercial schools have not offered anything but clerical work. During the past five years there has been a marked development of schools of salesmanship conducted within stores, and correspondence schools of the same nature. Both illustrate, so far as they go, the growing conviction that other and more important functions of business must have appropriate training.

Coeducation in Commercial Education

The principle of coeducation in business education as carried on at present in general high schools deserves some comment in passing. The significant fact observable in Mr. Chatfield's figures is the specialization of occupation by sex. Business men confirm this fact by the frequent statement, "We employ women stenographers." Clerical training is more appropriate to the tastes and capacities of girls. They succeed better in it, and find employment with this equipment more readily. Co-educational commercial schools, as stated above, testify that boys drop out faster than girls. Here is a typical answer from school principals: "Initial ratio of boys to girls is 2 to 3; at the end of the course the ratio is 1 to 4 or 5." The boys of the High School of Commerce of Boston, which has the double advantage of being a separate school (no girls), and having a course of study of a non-clerical character, persist in attendance on the average better than boys in general schools, e. g., High School of Commerce, Boston, annual loss of membership, 13.46 per cent. (1906-10); English High School, Boston, 16.7 per cent. (1907-10); Central High School, Detroit, 17.6 per cent. (1905-10); East High School, Cleveland, 17.4 per cent. (1905-10).

An Experiment in Segregation of the Sexes

In one general high school in New York City (Bryant), an experiment has been made during the current school year in segregating the sexes in commercial courses. Following is the reply of the principal under date of March 19, 1912:

"Referring to yours of the 13th instant, I beg to say that before the segregation of the sexes in our commercial department 41 per cent. of the boys who entered would leave before the end of the first term. Since we have made a commercial course adapted to the requirements of boys, only 8 per cent. leave during the term, and of this 8 per cent. seven-eighths leave the commercial course to enter the regular four-year course."

While this experience seems to be a strong endorsement, the experiment has been carried on for too short a time to base positive conclusions upon it.

Economic, social, and sentimental reasons still tend to keep many high schools coeducational, but it is well worth while in New York City to inquire further into the principle of segregation. For the purpose of effective commercial education, we maintain that the segregation of the sexes is of vital importance.

Courses of Study in New York City

Commercial High School, Brooklyn

We may now proceed to examine with some detail several courses of study in operation in New York City commercial schools. Courses of study can only be judged in the relation of principle to practice. If the aims are challenged then the course of study exalting those aims cannot be approved. Let us examine several courses of study in the light of desirable and of mistaken aims.

Courses of Study of the Commercial High School, Brooklyn

FIRST YEAR

THREE-YEAR COURSE

FOUR-YEAR COURSE

	Hours		Hours
English	5	English	5
Business Practice (Arithmetic and Penmanship)	5	Business Practice (Arithmetic and Penmanship)	5
Commercial Geography	2	Commercial Geography	2
Biology	3	Biology	3
Bookkeeping and Correspondence	4	German or Spanish	5
Music	1	Music	1
Drawing	2	Drawing	2
Gymnasium	2	Gymnasium	2
Assembly	1	Assembly	1



COMMERCIAL HIGH SCHOOL, BROOKLYN.
Class in Typewriting.



COMMERCIAL HIGH SCHOOL, BROOKLYN.

Class in accounts and banking. Commercial courses of three and four years are offered in the Commercial High School of Brooklyn.

SECOND YEAR

	Hours		Hours
English	3	English	3
History	3	History	3
Stenography	5	Stenography	3
Physics or Chemistry	4	Physics, Chemistry or Algebra	4
Accounts	5	Language	5
Music	1	Bookkeeping and Correspondence	4
Gymnasium	2	Music	1
Drawing	2	Gymnasium	2
Assembly	1	Assembly	1

THIRD YEAR

English	3	English	3
American History	4	American History	4
Stenography	5	Stenography	5
Law, Shop or Drawing	3	Language	5
Accounts	2	Accounts	5
Typewriting	5	Music	1
Music	1	Gymnasium	2
Gymnasium	2	Assembly	1
Assembly	1		

FOURTH YEAR

English	3
Language	4
Typewriting	5
Law, Drawing or Shop	3
Economics	3
Chemistry, Physics or Geometry	4
Music	1
Gymnasium	2
Assembly	1

The Four-Year Course gives a thorough preparation for business and for life, and leads regularly to the DIPLOMA of the school. It also fits those who desire it for higher study.

The Three-Year Course is designed for those who cannot afford to take the longer time. It omits the study of a foreign language and leads to a *CERTIFICATE*.

The courses are so arranged that at the end of the first year a pupil may change from the three-year course to four, or from the four-year to the three.

Parents will be kind enough to indicate in the space below the course they wish their sons to take by crossing out the course or language which is NOT to be taken.

The aims of the four-year course are set forth in the first explanatory paragraph, and they are apparently twofold, namely, a preparation for business and for life, and for higher institutions. The advantages of specialization are lessened in this double objective. The whole theory of special schools is to devote the major effort to some one aim. The attempt to include preparation for higher institutions is unfortunate. It was explained to the investigator that fitting for life was not an optional and distinct aim, but a concomitant of the purpose of this school which, while fitting boys for business, gave general culture and equipment for citizenship. This is entirely praiseworthy, but it ought not to

be necessary to assume that a proper vocational education does not contain within its own meaning these general assumptions. Fitting for life has long been stated to be the aim of general education; but the definition of the meaning of the expression has too often not been clear or satisfactory.

The choice of subjects found in the course of study of a special school intended to provide vocational (commercial) training for business is justified by New York City principals, as follows: the subjects must be, first, of a general character, giving the material necessary for any well informed person—such subjects are English, history, arithmetic; second, the methods involved in acquiring certain subjects are useful as a part of a general equipment—such subjects as mathematics, science, composition; third, they must constitute a body of special vocational equipment—such subjects as bookkeeping, office practice.

The course of study under consideration shows, to a degree, a comprehension of and adherence to these principles. Such a subject as English can and should, while constituting a subject involving general values, still be in a commercial school a specific kind of English for pupils selecting the vocation of commerce as an objective; for it is entirely possible that one subject may possess a twofold value, namely, culture and vocational training. A similar statement will apply to other subjects, such as history, chemistry, and physics. The assertion that the course of study fits for higher institutions shows, in a large measure, that the vocational motive shares attention with another, the accomplishment of which is difficult and engrossing. An examination of college entrance requirements and State syllabi will bear out this contention.

In the above course of study are found subjects which cannot be justified as requirements for any adequate reason, e. g., music for four years, drawing, and geometry. We can find no adequate evidence to show that stenography should be a requirement for boys in a commercial high school. Shop work with no bearing on the problems of commerce as an elective in a commercial school is out of place. Biology may be justified on the ground of its general value; but as fundamental commercial sciences physics and chemistry with special applications should be preferred. Biology is more aptly the science for agricultural education.

The course of study is too choppy; that is, there are too many subjects, and too few periods are assigned to each subject. This probably comes from the attempt to divide the aim of the school. We agree with the following opinion of the Committee of Sixty (High School Teachers' Association) contained in the official bulletin of March 16, 1912: "We concur in general with the present tendency in educational theory favoring greater concentration upon fewer high school subjects. At present many of our students are required to carry six or more subjects at once. This leads to distraction, superficiality, and the violation of many principles of efficiency."

In justice to the school under consideration, it should be mentioned that a number of subjects, e. g., chemistry, are made to conform to the vocational purpose of the school. One English teacher expressed himself as dissatisfied with the English course as tested by regents' requirements, and favored a different kind of English to better suit the needs of commercial pupils. The head of the department, however, was of the opinion that the academic English was of superior advantage. The principal of the school was entirely favorable to the opinion voiced in the criticisms given above. He says: "Our syllabi follow in English the regular State and city syllabus; in other departments we follow plans of our own, adapted to the special requirements of a commercial school. Our history is made largely social, industrial, and economic. Our physics and chemistry are given but four periods a week, where the college entrance requirements call for five periods, and the work is made to turn largely upon industrial applications. Our mathematics is also necessarily below college entrance requirements, being given only four periods a week."

The Commercial Course in Jamaica, Flushing, Newtown, Richmond Hill, Far Rockaway, and Bushwick High Schools

FIRST YEAR

English	5
German, or French, or Spanish	5
Commercial arithmetic, 1 and 2	5
Physiology and Hygiene.....	5
Bookkeeping, Penmanship, and Business Forms, 1 and 2	5
Drawing	2
Voice Training and Declamation	1
Music	1
Physical Training	2
	<hr/>
	26

Pupils wishing to defer the study of Bookkeeping until the second year may take in its place either Biology or Algebra.

SECOND YEAR

English	3
German, or French, or Spanish	5
Bookkeeping, 3 and 4	5
Stenography, 3 and 4	5
Typewriting	4
Business Correspondence	3
Physical Training	2
Music	1
	<hr/>
	28

Pupils not wishing to take both Stenography and Bookkeeping may substitute for either of these Algebra or Chemistry.

THIRD YEAR

English	3
German, or French, or Spanish	5
Bookkeeping and Office Practice, 5 and 6	5
Stenography, 3 and 4	5
Typewriting	4
Commercial Law	3
	<hr/>
	25

Pupils not wishing to take both Stenography and Bookkeeping may substitute for either of these Geometry or American History and Civics.

This course is followed in the schools noted above and is closely similar to the courses used in the other general high schools offering three-year courses. It is interesting to note that pupils not wishing to take the vocational subjects of the course may substitute other subjects not vocational. If pupils take advantage of this option, how may it be claimed that they are pursuing a commercial course? One principal asserts that pupils practically never do take advantage of it in his school. The course is frankly clerical; it is pursued mainly by girls who can best profit by it and who find the readiest market for clerical accomplishment, and it is defensible for them. It is not suitable for boys, a lesser number of boys are attracted by it; the failure of boys to persist in it has already been noted. The general subjects, such as English and modern languages, are not related to the vocation, and very frequently no separate sections are maintained for commercial pupils. The course, on the whole, is better for girls than the course in the Commercial High School of Brooklyn is for boys. The requirement of commercial law may be questioned. The term is pretentious and suggests a degree of maturity which cannot be assumed in the third year of the secondary school period.

Course of Study in the High School of Commerce, Manhattan

COURSE OF STUDY

The High School of Commerce, Manhattan

FIRST YEAR

Required	Periods
English	4
German, French, or Spanish	4
Algebra	4
Biology* (with especial reference to materials of commerce)	4
Business Knowledge and Practice**	6
Drawing (second half year)	2
Physical Training*	2
Music	1
* Including Physiology.	
** Including Local Industries and Government of The City of New York	
Business Writing	2
Business Arithmetic, Business Forms and Methods	2

SECOND YEAR

Required	Periods
English	3
German, French, or Spanish	4
Plane Geometry	3
Chemistry (with especial reference to materials of commerce)	4
History* (with especial reference to economic history and geography)	3
Stenography	3
Drawing and Art Study	2
Physical Training	2
	<hr/>
	24
* First half year, Beginning of Nations to 1300 A. D. Second half year, Modern History to 1750.	

Electives	Periods
German, French, or Spanish	4
Bookkeeping and Business Forms	3
Business Arithmetic	1
Commercial Geography	1

THIRD YEAR

Required	Periods
English	3
German, French, or Spanish	4
Geometry and Algebra*	3
Physics	5
History** (with especial reference to materials of commerce)	3
Drawing and Art Study	1
Physical Training	2
	<hr/>
	21

Electives	Periods
German, French, or Spanish	4
Bookkeeping and Business Arithmetic	3
Stenography and Typewriting	3
Drawing and Art Study	2
Commercial Geography	1

* In the second half year, students may elect additional Stenography and Typewriting or Bookkeeping in place of the second course in Mathematics, or may give double time to Mathematics by omitting either Stenography or Bookkeeping.

** First half year, English and Colonial History, 1620 to 1750. Second half year, Modern History (England and the Continent), 1750 to present time.

FOURTH YEAR

Required	Periods
English	3
German, French, or Spanish	4
Economics and Economic Geography	4
History of the United States (with especial reference to industrial and constitutional aspects)	4
Physical Training	2
	<hr/>
	17

Electives	Periods
A Foreign Language	4
Advanced Chemistry	4
Economic Biology	4
Trigonometry and Solid Geometry	4
Elementary Law and Commercial Law ¹	4
Advanced Bookkeeping, Business Correspondence, and Office Practice.....	4
Stenography and Typewriting	4
Drawing and Art Study	4
Modern Industrialism	1

¹ Students who do not elect law in the fourth year may receive instructions in Commercial Law in connection with Advanced Bookkeeping.

The course shows a broad scope intended to cover both "general culture" and training for business. It is open to the criticism of containing too many subjects with too few recitations per subject. Again, we do not approve stenography as a compulsory study for boys in any year. We seriously doubt the wisdom of compulsory music, drawing, and art. Plane geometry as a *compulsory* study in commercial schools cannot be defended, and the geometry and algebra of the third year are of more than doubtful value in such a school. The amount of compulsory algebra and geometry throughout the course is practically that of a college preparatory school, and this school is not frankly college preparatory.

The High School of Commerce is the only school not fettered by regents' examinations, and the opportunity to establish a course of study more suitable to the special needs of commerce is consequently large. The course of study is stronger than that of the Commercial High School of Brooklyn; but the school has not taken full advantage of its opportunities. In addition to the defects pointed out above, it should be noted that commercial geography as an elective one period per week in the third year could well be offered with more periods as a required study in the same year instead of algebra and geometry. Commercial law in the fourth year (elective) should replace history (required).¹

The school syllabi show a commendable effort to embody the vocational purposes of the school. The general subjects, when possible, are made to possess a commercial value. For example, the aim of the instruction in modern languages is said to be "thorough grounding in the essentials of grammar, reading, of representative German, French, and Spanish prose; the acquiring of an active vocabulary; mastery of simple commercial correspondence. The aim of the course is to give the pupil a fair speaking knowledge, a good reading knowledge, and a familiarity with commercial German, French, or Spanish." Testimony from the principal is as follows: "The general work is intimately related to the fundamental work of the school, and for that reason has little in common with the general work of the academic high school. Every department has its particular problem, the task of making its work function in a genuine training for business." We conclude that the ideal set up

¹ See footnote 2, p. 50.

in this testimony would be far more productive of results in a course of study more definitely vocational.

Teachers in Commercial Schools without Experience and Training

As noted in Section I, the lack of teachers with commercial experience and sympathy is a serious matter. In the Commercial High School of Brooklyn, eighteen out of ninety-six are so-called commercial teachers—meaning teachers who instruct in clerical arts. The remaining teachers—seventy-eight in number—came from general lists designed to furnish teachers for academic high schools. It cannot safely be assumed that the majority of these teachers will acquire the vocational point of view after being assigned to the special school. Higher schools of commerce (college and university) have attained some prominence in this country, and it would seem probable that such schools could train sufficient teachers for secondary schools of commerce. The requirements of Germany are suggestive as proper models. In that country teachers for secondary commercial schools are required to be either graduates of higher commercial schools or else to have actual commercial experience.

Reasons for Poorer Quality of Commercial Pupils

Attention was called in Section I to the relatively poor quality of commercial pupils (particularly in general high schools), poorer in mental power, social grade, and in personal character. A law of human gravitation probably explains this phenomenon. Our commercial education at present trains only for the "enervating" occupations of commerce, corresponding in a rough way to the automatic work of industry. Commerce has its full amount of energizing occupations—more perhaps relatively than has industry. But commercial education does not take cognizance of these opportunities; and as a consequence the higher type of individual, the energetic, forceful, and ambitious boy or girl, does not pursue commercial education.

There are other contributory reasons to the failure of the best pupils to select commercial education. Social prejudice is still strong against many forms of applied education. Teachers in the elementary schools, consciously or unconsciously, influence the brightest pupils toward what is considered more liberal education. Ambitious parents still see in the professions a better prospect than in business. Changes in this attitude are beginning. The overcrowding of the professions and the growing opportunities of business are counteracting influences; the preponderance of college men entering business is another significant sign.

Commercial education can be made to appeal to all classes of pupils, but several specific things are immediately necessary to remedy present conditions. Commercial education must greatly expand its scope to em-

brace the larger opportunities of business; business men must coöperate in many ways; they must set standards and point their needs more specifically. It is also important that a large amount of information concerning business opportunities must be made available for pupils, parents, and teachers.

Objections to Regents' Examinations

Finally, a word must be said here as to the effect of regents' examinations on commercial education. The foremost objection to the regents' examinations in this field is the fact that these examinations enforce and perpetuate a set of standards which are artificial, not real. The limitations of the present purpose of these examinations, and the desirability of adding other and more important aims, have already been pointed out. Further, a set of written tests, such as constitute the regents' examinations, do not test vocational efficiency, for the true test of vocational efficiency is the success of the individual in business; and a thorough system of following up pupils in business is a more appropriate test of vocational efficiency than any written test can be. But the teacher is held responsible for the success of boys and girls on written papers. The teacher's promotion to the highest grade of rank is judged in part by this standard. The natural inclination of the teachers is to disregard the real test in the business world and to exalt the artificially imposed standard. The investigator found evidence that the temptation is strong for teachers to drill pupils on past examination papers, to emphasize topics which are liable to be asked in the State tests. The danger is constant that coaching and cramming may take the place of instruction and the development of real power. Again, it is an open question whether written examinations really test educational achievements. Educators have never agreed that they do.¹

The apparent reason why commercial education has been subjected to the regents' examinations is due to the fact that commercial subjects have been classified as academic subjects, instead of vocational subjects. The State department does not demand examinations in agriculture, home science, and shop work, presumably because these subjects are classified as vocational. The failure of educators to conceive commercial education as vocational in nature is the cardinal error in the whole matter. The further treatment of this matter will be reserved for Section III.

¹In a paper before the Harvard Teachers' Association, March 9th, 1912, Clyde Furst, Secretary of the Carnegie Foundation, made the statement that an exhaustive study of the results of college entrance examinations showed that achievements in these tests have little relation to the records made in the preparatory schools and small relation to the grades attained in college.—*The School Review*, p. 324, May, 1912.

Section III

Vocational Education Defined

We asserted in the concluding statement of Section II that the crux of the shortcomings pointed out lay in the failure to conceive commercial education as vocational education. What, then, is vocational education, and why is commercial education not vocational? We have adopted the following definition of vocational education:¹ "Vocational education' shall mean any education the controlling purpose of which is to fit for profitable employment." The definition, however, is not so significant as the interpretation of it. Certain forms of vocational education in several states are aided by state money. The definitions of vocational education in these cases are very specific, and approved schools must fulfill the conditions laid down by the state authorities.

In general, state-approved vocational schools must have a direct connection with the vocation taught. Teachers in the schools must have had actual experience in the vocations; there must be advisory committees composed of members representing the industries taught; the equipment must be suitable, and the selection of pupils must be made somewhat upon the matter of fitness and adaptability. Courses of study must be formulated in harmony with the aim as defined; provision for co-operative and part-time work must be made. There is no admission of the principle of divided motives such as have been pointed out in connection with the New York City commercial schools. The vocational schools under the interpretation of the Massachusetts law must meet the needs actually discoverable in the industries aimed at.

We have pointed out the discrepancy between commercial needs and commercial education. In a word, education is vocational in proportion as it meets the needs and conditions of the vocation. New York City commercial schools lack the vocational characteristics just so far as they fail to see and meet those needs. In a broad sense, all schools are vocational in that they aim at general preparation for participation in life's activities; but preparation for vocational life in a specific and comprehensive way is the essential aim of vocational schools.

New York City Commercial Courses are not Vocational

New York City's commercial courses are academic rather than vocational. The general subjects in the course are in most cases not related to the vocation; the specific vocational subjects cover only a part of the vocation, and the lesser part at that. Compared with the vocational industrial courses taken as a type, the commercial courses under consideration have so small a connection with commerce that they cannot be strictly classified as vocational. It is true that the pupils who have pur-

¹ Massachusetts State Laws, Acts 1911, Chapter 471.

sued these courses go into commerce, but that fact does not make the courses vocational. The product of all the schools in any large commercial center go into commercial pursuits, but this fact does not make the schools vocational. Approximately 60 per cent. of the graduates of one of our large Eastern colleges go into commerce,¹ but this Institution cannot be called a vocational school. The failure of the teachers to conceive commercial work as vocational is well illustrated in the official bulletin of the High School Teachers' Association of New York City, March 16, 1912. Here, under an excellent suggestion for a five-subject program, is found the designation of commercial subjects as optional with algebra, Latin, household economics, mechanic arts; that is, commercial work is just like an academic subject, to be pursued four or five periods a week in connection with other subjects having general or indefinite aims. One would not for a moment expect to train industrial workers by any such plan, and the attempt to train commercial workers is equally futile.

The Countrywide Misconception of Commercial Education

New York City is not the only city with a false or inadequate conception of commercial education. Such a conception is countrywide. The prevailing notion concerning commercial education may be seen in the printed proceedings of the National Educational Association, 1911 (pp. 827-868). The important papers in the proceedings have the following titles: "Bookkeeping Fundamentals," "Teaching Typewriting for the Best Results," "Business English," "Commercial-Economic Geography," "Shorthand, Its Educational and Practical Value." Nowhere in the discussions does there appear the realization of fundamental principles. None of the speakers seemed interested in the matter of whether or not commercial education is pointing in the right direction, to say nothing of whether or not it is hitting the mark.

Inadequate Foundation of Commercial Education

There are reasons for the widespread ineffective type of commercial education. Commercial education came into the public school systems of the country at an unfortunate time, at a time when it was pedagogically unfashionable for schools to have a vocational purpose. All subjects at this epoch were idealized in order to make them yield what were considered cultural values. When manual training came into the schools many people thought it would benefit industry. We now find it necessary to industrialize manual training if it is to serve vocational ends. It will be equally necessary to vocationalize commercial education, for commercial education has been conventionalized into a high school subject which gives "points" toward a high school "*academic*" diploma. The

¹ Studies made of the classes of 1901, 1904, 1905 of Harvard College.

aims, means, and methods of commercial education have been subjected to no investigations preliminary to adoption, nor to real tests as to its present effectiveness in practice. Commercial education was originally conceived to be merely clerical training, like that carried on in business colleges, and that notion, largely unchanged, still persists.

A Better Plan

Let us suppose that commercial education, like industrial education, had been delayed until the present time. Let us assume that state authorities in order to establish commercial education should appoint commissions to study the problem and to report an appropriate plan of procedure. What would they most likely do, and what plans would probably be proposed? Without doubt the program of procedure adopted would be quite similar to that for industrial education.

The plan adopted for state-aided schools in a neighboring state are suggestive. In Massachusetts an investigation of the need of an industrial school in a community is made through a temporary commission, which consists of¹ "manufacturers and workingmen representing dominant industries of the vicinity, of ladies of experience in social and industrial questions, and of members of the local school committee, together with the superintendent of schools." The problems to solve are in part these: "What is the need of industrial education in the community? What are the dominant industries to be served by the proposed school? What becomes of boys and girls leaving school at fourteen? Which groups are to be reached by different forms of industrial, household arts, or agricultural training? What part is the all-day school to play? the part-time (coöperative) school? the evening school?"

The above method is recommended. Why should not such a procedure be advantageous in establishing commercial schools and in testing commercial schools now in operation? The problem of industrial education is closely similar to the problem of commercial education. Each leads to useful occupation in the community. Training for the production of goods and training for the marketing of goods should be based on similar principles. An increasing number of industrial corporations combine in one management both economic operations. There is no reason why one should be practical and the other academic.

Adjustments that Commercial Education Must Make

Commercial education to fulfill its function must make several important adjustments. Courses of study must be so planned that the general subjects shall be related to commerce; teachers of general subjects in commercial schools should have had either practical business experi-

¹ Bulletin No. 3, 1911, Massachusetts State Board of Education.

ence or training in higher commercial institutions; *and the more important departments of business should receive appropriate recognition.*

In the studies of business organization, referred to above,¹ we saw that a large portion of business may be called competitive, i. e., buying and selling. In the study of the department store organization we saw that 40 per cent. of the whole force are employed in the active, creative function of business. Commercial schools must train for this need. Clerical training does not train for the buying and selling of goods.

Business Men Have Not Seen Their Responsibilities

Again, commercial education must establish working relations with business houses—a partnership in which each does its share—the school in giving proper theory, and the business house in offering opportunities for practice. The problem of proper commercial education will not be solved until the business man admits and assumes his responsibility in the matter. Coöperative arrangements are no more impossible in connection with business houses than in connection with factories, and there is no reason why the manufacturer should show altruism to the extent of shouldering part of the burden of education and the business man expect the state to assume the whole function; in fact, there is but one philosophy of vocational education; differences should be found only in details.

Because the public school has hitherto assumed the responsibility for commercial education, commerce has felt no responsibility for it. But the experience in vocational (industrial) education points strongly to the general conclusion that the school unaided cannot deal effectively with the problem (see Dr. Schneider's report). Business men will need to go through the evolution of thought which is leading the manufacturer to assume his share in industrial education. For reasons of efficiency, expense, and expediency, commercial training will need to be divided between the school and the business house. Business, like industry, formerly had a system of apprenticeship which will need to be reestablished in some form of coöperation with the schools. In the meantime the schools must not wait: a plan which is immediately possible must be undertaken: and practical coöperation between the school and business must be constantly aimed at.

Difficulties in the Way of Better Commercial Courses

It is true that trained teachers and suitable textbooks are not now available, that we have no satisfactory standards of work. There never will be these teachers nor the essential means of instruction unless we

¹ Pages 30, 31.

make a beginning, and we have too long delayed the attempt. Five years ago the materials of industrial education were unorganized, and no teachers were available. The energy of states and individuals has done much in the short intervening time; a markedly successful beginning has been made, and the essential materials for effective industrial education are beginning to appear. A vigorous beginning of improved commercial education is equally possible in the next five years. The important thing is the conviction that the commercial education we now have must be thoroughly reorganized and improved.

Newer Types of Commercial Schools—High Schools of Commerce

The creation of high schools of commerce in the large cities of the country shows a beginning of the realization of the principles maintained in this report. Unfortunately, these schools, as a rule, have not broken away from the clerical traditions which have obsessed commercial education. In the following pages we present several courses of study which are suggestive of what is needed:

Course of Study for a Boys' Commercial School

(4 years)

FIRST YEAR

	Periods per Week of Home Preparation	Periods per Week of Recitation
English (related) ¹	4	5
Commercial German, or Spanish, or French (to be pursued for four years; to be selected after one month in school)	4	5
Penmanship, 1st half; Business Knowledge and Practice, 2d half	4	5
Physical Geography, ¹ $\frac{2}{5}$ of year; Physics, ¹ $\frac{3}{5}$ of year	4	5
Mathematics (Commercial)	4	5
Assembly (talks by business men) .....	..	1
	—	—
	20	26
No electives.		

SECOND YEAR

English (related) ¹	4	5
A Modern Language. (See 1st year)	4	5
Bookkeeping	4	5
General History, ¹ $\frac{2}{5}$ year; Commercial Geography, $\frac{3}{5}$ year... ..	4	5
Mathematics (Commercial)	4	5
Assembly (talks by business men) .....	..	1
	—	—
	20	26
No electives.		

¹ These general subjects are understood in each case to be treated in relation to commerce.

THIRD YEAR

	Periods per Week of Home Preparation	Periods per Week of Recitation
English (related) ¹	4	5
A Modern Language. (See 1st year)	4	5
Chemistry (Commercial)	4	5
Typewriting .....	..	1
Assembly (talks by business men) .....	..	1
Economic History	4	5
Local Industries .....	..	2
	<hr/> 16	<hr/> 23
Elective—One of the following subjects required:		
Bookkeeping	4	5
Stenography and Typewriting (to be pursued 2 years).....	5	6
Plane Geometry	4	5
Advanced Commercial Arithmetic (Special Commercial Problems)	4	5
Drawing—Commercial Design .....	..	3

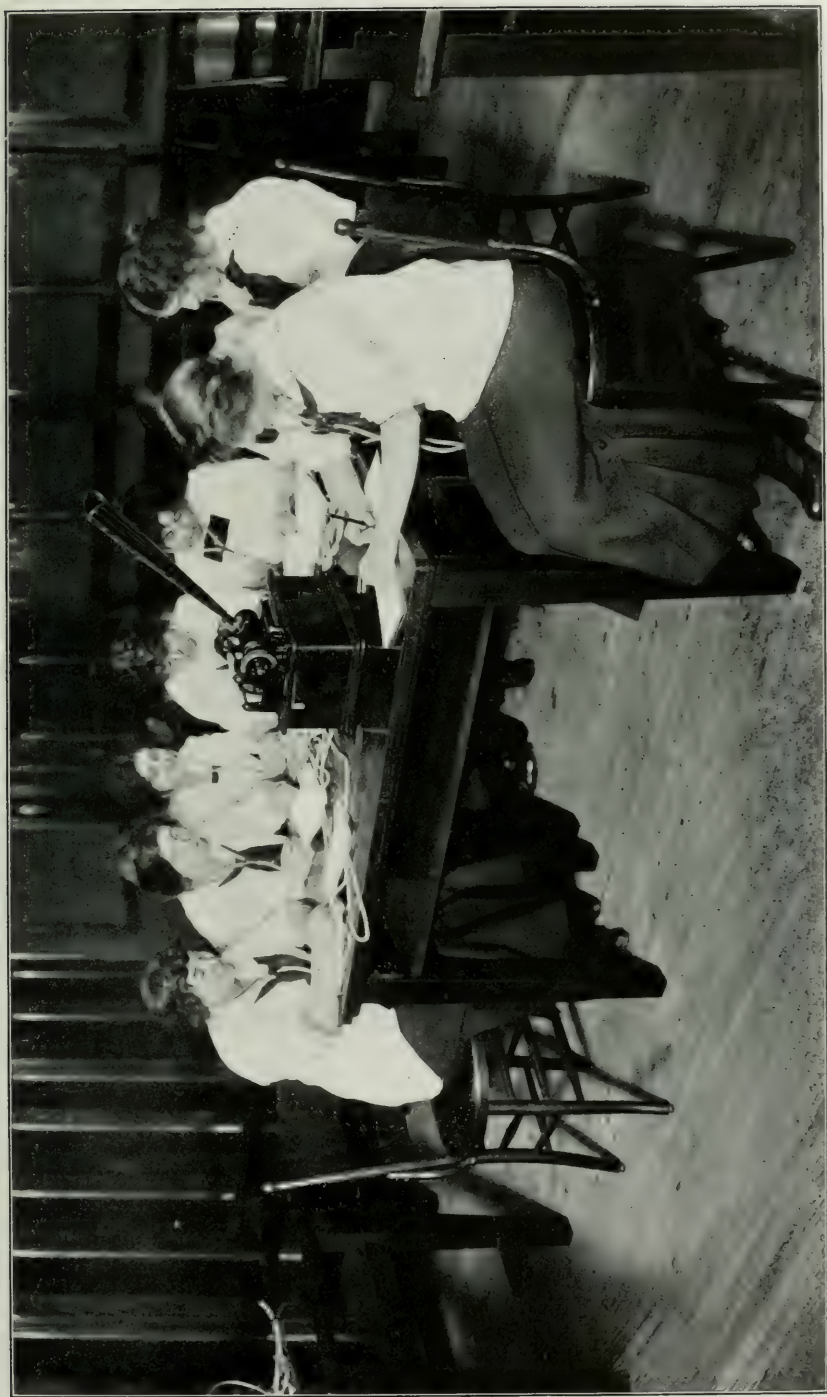
FOURTH YEAR

English, 1st half (related); Civil Government, 3d quarter; Commercial Procedure, ² last quarter	4	5
A Modern Language. (See 1st year)	4	5
Economics	4	5
Bookkeeping, unless taken 3d year as elective (including arithmetic and penmanship review)	4	5
Assembly .....	..	1
Lectures, by business men, Advertising, Salesmanship, South America, Business Procedure, Economic Resources of the United States .....	..	2
	<hr/> 16	<hr/> 23
Elective—One of the following subjects required:		
Merchandise, Salesmanship, Business Organization	4	5
Bookkeeping, Accounting	4	5
Stenography and Typewriting (continuous elective)	5	6
Chemistry, Applications to commerce	4	5
Drawing (Commercial Design) .....	..	3

The above course of study is not offered as a finality, but as one that is practicable under present conditions, and promising a possibility of development away from the clerical training of the past toward training for the larger aspects of business activity. In the course of time the group (fourth year) named "lectures, etc.," should grow to a subject given the full time during the fourth year. This course of study does not compel exclusive attention to clerical subjects, though there is opportunity by means of electives for boys to get as good clerical training as has been offered in the past. The general tendency of the course is to direct the boys' attention toward the active, competitive side of business.

¹ These general subjects are understood in each case to be treated in relation to commerce.

² Such aspects of commercial law as may be valuable and comprehensible to students of high school age.



A STENOGRAPHY CLASS TAKING GRAMAPHONE DICTATION, WASHINGTON IRVING HIGH SCHOOL, MANHATTAN.

By means of electives in the fourth year, opportunity is given to specialize in one of the three major functions of business, namely, merchandising, accounting, secretarial work. Along with the pursuit of the above outlined course all students should pursue apprenticeship work in stores; they should be employed on Saturdays, Mondays, during holidays, or by means of some other part time arrangement. Theory without practice is unprofitable.

Co-operative Arrangements Between Schools and Business Houses

We recommend the beginning of coöperative plans between commercial schools and business houses. We present no argument for the desirability of such coöperation because objections are not so apt to arise over its desirability as over its practicability. Successful experiments are now carried on, e. g., in Boston, where boys work during the long vacation period on Saturdays, and during the Christmas and Easter holidays. The definite week and week plan characterizing industrial education has not been widely attempted. It is probable that commercial education will find some other arrangement more profitable. The best plan can be discovered only by experiment, and experiment should begin. No one has attempted yet apparently a part-time plan for girls; the difficulties here are probably not greater than for boys, and the need of such a plan will become increasingly apparent.

For a girls' clerical course we commend the one found in the Washington Irving High School as most effective. This course has the advantage of concentration upon vocational subjects in the second and third years. The course can be improved by requiring general subjects to be related to the vocation. Exemption from regents' examinations would make this easily possible.

Washington Irving High School

Course of Study of Three Years

FIRST YEAR	
Required	Periods
English	5
Commercial Arithmetic	5
German, or French, or Spanish, or Group II., or Group III., of second year, and additional drawing	5
Drawing	2
Domestic Science and Art	5
Physical Training, including Physiology and Hygiene	2
Music	1
Declamation and Voice Training	1
	<hr/>
	26

SECOND YEAR

Required	Periods
English	5
Physical Training	2
Music	1
Declamation and Voice Training	1
Drawing	2
	<hr/>
	11

The modern language chosen in the first year may be continued during the second and third years as an alternative for music, declamation and drawing in the case of those who select Group I, Group IV, Group V, and Group VI.

2d and 3d years

(Stenographers and Typewriters)

Stenography, Typewriting, Bookkeeping, Penmanship, Spelling, Office Practice. 19

THIRD YEAR

Same as Second

Merchandise and Salesmanship for Girls

We recommend that a course of study similar to the above with the subjects merchandise and salesmanship as a vocational group be established in connection with the Washington Irving High School. The school, by reason of its location in the business district, seems to offer a favorable opportunity for such an experiment. A large number of girls find employment as salesgirls; this employment promises opportunities of comparative attractiveness.¹ The failure of the school system to supply education for the training of salespeople has compelled large retail stores to institute schools of their own, e. g., John Wanamaker. It is quite probable that the stores would enter into a coöperative plan with the schools, whereby this training could be more effectively carried on.

Separation of the Sexes in Commercial Education

We recommend, in general high schools, the segregation of the commercial pupils into a commercial department. This department should reproduce as nearly as possible the separate special commercial schools, and the sexes should be separated for efficiency and for vocational reasons. The boys should pursue a course as nearly as possible like that of the best special commercial schools for boys, and the girls should be given a course founded upon the best models for girls. The city of Cleveland has a high school of commerce for boys and girls; but the sexes pursue different courses, each suited to the needs of the sex. There is no more reason for the same courses for boys and girls in commerce than there is for the same courses for boys and girls in industry. One

¹ Bulletin No. 10, Girls' Trade Education League, 6 Beacon St., Boston.



CLASS IN SALESMANSHIP IN WASHINGTON IRVING HIGH SCHOOL, MANHATTAN.

The Washington Irving and Bryant High Schools offer special technical courses for girls.

of the city high schools (Bryant) is following a plan of segregation like the plan recommended above.¹

Elective Commercial Courses

The question has been raised as to whether or not pupils taking general courses without a particular objective should be allowed to take incidental commercial courses—such as a year in bookkeeping. As long as the principle of election in high schools is maintained, it will be illogical to deny such privilege. An incidental commercial course taken in high school does not mean commercial training; a pupil with this equipment offering himself to a business house as a product of specialized training will damage the cause of commercial education. Undoubtedly much of the criticism of business men on commercial schools has been due to experience with such inadequately trained boys and girls. It is evident that a boy who has pursued a subject or two in manual training is not fitted for industry, and it is equally evident that a commercial subject or two does not fit for commerce. Our general recommendation for specialization, for segregation, and for concentration suggests a general modification of the elective system in high schools; but we will not press this point further than to state that vocational education cannot be effectively undertaken under the principle of election of studies as generally applied to-day.

Evening and Continuation Schools

A report on the efficiency of commercial education would be incomplete if it did not deal with the problem of evening and continuation commercial instruction. An excellent exposition and summary of this subject was made by Dr. John L. Tildsley, principal of the DeWitt Clinton High School, in an address before the New York Chamber of Commerce.² Mr. Tildsley quotes Mr. Chatfield's figures, showing that there are 400,000 boys and girls between the ages of fourteen and eighteen in New York, of whom less than 150,000 are enrolled in schools, public and private. Approximately 250,000 boys and girls are not under day-school influence, and it is certain that the major portion of the number do not attend evening schools. A very large part of this total of 250,000 could profit by commercial instruction. The City Superintendent of Schools advised² the substitution of day continuation schools for the present evening schools affecting children coming under the compulsory attendance law. This suggestion is in entire accord with our recommendations, but we desire to emphasize the fact that day continuation schools should be planned to include those between the ages of fourteen and eighteen, and that evening schools be made available for all

¹ See Mr. Demarest's letter (p. 36).

² Monthly Bulletin, Chamber of Commerce, March, 1912.

over eighteen. This plan has proved practicable in Germany and seems easier of control and organization than any other plan.

Mr. Tildsley recommended that commercial continuation schools should be conducted by the Chamber of Commerce. Here we differ. Education has grown to be a function of the state—not only traditional education, but all education which is necessary for the welfare and benefit of the state. Continuation schools of all kinds promise to be effective and integral parts of the general educational machinery. Public opinion has not in the past recognized the now evidently enlarged scope of public education. Conviction of the need of continuation schools is growing, and support and expansion will necessarily follow. Cities of this country are undertaking the problem of continuation schools with success and promise—witness Boston and Cincinnati.

Commercial education in the evening schools of New York has long been carried on. Large numbers of pupils¹ are enrolled, and the success attained has been such as to justify, with our recommendations as to continuation schools, the retention and expansion of the work. Mr. Tildsley² mentions some of the obstacles of evening schools as follows: "The greatest obstacle to the success of evening school work in this city is the great fluctuation in the attendance of the pupils. Our business hours are long; the distances to be traveled great. The will power necessary to induce pupils to attend evening courses on four nights a week for one hundred and twenty nights, from eight to ten o'clock, is found only in the exceptional boy. Business education cannot thrive on a 40 per cent. basis of attendance of those registered."

A thorough investigation of the evening schools could not be undertaken by us, but a brief discussion of evening commercial instruction is appropriate in this report.

Commercial work in evening schools in New York City is quite similar to that in other large American cities. The work is almost wholly clerical and without most of the liberal features found in day-school courses. There is a lack of gradation of students with respect to age, previous attainment, and capacity, a condition which makes for ineffectiveness and loss of membership. As is usual in evening schools throughout the country, there is found a considerable proportion of pupils who come with serious purpose, with a realization of their needs, and with an ambition for improvement; but this class forms the winnowing from the chaff, for the major portion of evening school pupils do not remain and do not profit in considerable measure by the instruction offered.

Improvement can come by a closer adaptation of the work to the needs of pupils. The establishment of continuation schools, recommended above, would be of substantial advantage toward better gradation. The principles of the specialization of work for closer adaptation of courses to commercial needs is no less essential in evening commercial

¹ Report of the City Superintendent of Schools, 1911, pp. 140-142.

² Chamber of Commerce Bulletin, March, 1912.

schools than in day commercial schools. Again, the analogy of industrial evening schools is suggestive. One state¹ restricts attendance upon evening classes to those over seventeen years of age, who are employed during the day in industries to which evening courses are closely related. The strongest features of the plan are the subdivisions of the courses which meet specifically the needs of the varied groups of industrial workers.

The present undifferentiated and wholesale method of commercial instruction carried on in evening schools forms an example of ineffectiveness in marked contrast to the plan above suggested, which emphasizes individual needs.

Proposed Evening Commercial Course in the High School of Commerce

A course which promises substantial improvement for one class of commercial workers has been proposed by Principal Sheppard of the High School of Commerce. The aim of the proposed course is to supplement the work done in day commercial courses by offering advanced work similar to that of higher schools of commerce, such as the Wharton School of Philadelphia, or the New York School of Commerce, Accounts, and Finance. The course promises opportunity for training for fundamental business needs and does not restrict work to the clerical arts. This course should be offered without delay. The needs for adequate commercial instruction will be met, as we have pointed out, by differentiation of effort; and the course recommended promises to meet effectively the needs of several large and important classes of commercial workers.

Failure of the Public to See the Need of the Extension of Evening and Continuation Schools

Any comprehensive conception of the larger problem of supplementary education, whether in evening or in continuation schools, whether for industrial workers or for commercial workers, does not at present exist in this country.²

In New York there are 10,000 commercial pupils in day schools, a somewhat smaller number in evening schools³—a total which forms an

¹ Bulletin No. 3, Massachusetts State Board of Education, 1911.

² Principal Tildsley has pointed out this fact in the following terms: "In this country we have not begun to realize the importance of this work. We have nothing to offer in comparison with the work done abroad. The Board of Estimate of this city groans over the sums spent for evening schools. This year it has refused to increase the appropriations for the growth of these schools, and it has cut out an appropriation of \$15,000 for opening evening sessions of the High School of Commerce. Munich, in 1906, with a population of half a million, spent \$275,000 for continuation schools of all kinds. New York spent last year \$700,000. If it had appreciated the importance of this field of civic activity as did Munich it would have spent over two and a half millions."—Chamber of Commerce Bulletin, March, 1912.

³ City Superintendent's Report, 1911, pp. 140-142.

insignificant figure when compared with the possible number of persons who enter commerce each year, and who could profit by commercial instruction of some kind. In the country at large, in spite of the fact that we spend large sums for education, we have scarcely progressed beyond the ideal of literacy in education; that is, a conviction that each individual should know how to read and write and perform simple numerical operations. We have not yet come to the efficiency ideal of education, i. e., the ideal that each individual should be rendered as competent as possible through training. Our compulsory education law shows this, for we compel none to attend school after fourteen;¹ we have no compulsory continuation schools except in Ohio and Wisconsin, for those who have entered business or industry. A large expansion of many forms of applied education, involving day, continuation, and evening schools, will be necessary before it can be said that we are dealing with the issue in a way at all commensurate with its importance. When we really begin a comprehensive program of procedure, we must deal with both industrial and commercial education by the same methods, because there is fundamentally but one problem to be solved.

One-Year and Two-Year Commercial Courses

Returning to the day school problem, we recommend as instances of proper differentiation commercial courses of one year and of two years, in addition to the three-year and four-year courses now offered. Those who cannot attend for the longer period should have the best possible opportunities accessible to them. The need of shorter courses has been appreciated by the New York High School Teachers' Association, and set forth specifically in the report of the association (1910-1911):² "Many of the boys must necessarily leave a school of this sort before the end of the course. It should then be planned so that certain results should be accomplished at definite stages. This need not be placed before the boy in a way that will tend to encourage him to leave before the necessity really arises. The particular aim of the first year should be to make good office boys; of the second, to make capable clerical assistants; of the third year, to make efficient stenographers. The object of the fourth year is to help the boy locate himself in the special field of commerce and industry that he has selected." Courses with specific objectives are to be commended, but we cannot agree that the proper aims have been stated in the above recommendations, especially for the second and third years. Facts have been presented in this report showing that other aims for boys are more appropriate (pp. 15-20).

¹ Persons in New York State between fourteen and sixteen not employed are required to attend day school.

² High School Teachers' Association, 1910-1911. Sub-committee on a Preparatory Course for boys entering commercial life, pp. 85-86.

Intermediate Schools and Commercial Courses

Elsewhere will be found a report on the intermediate school (Dr. Bachman's report). Many pupils entering intermediate schools will pursue studies which will lead to commercial occupations as an outlet. Some pupils will not continue their education longer than the period comprised in this type of school, and others will continue one or more years in the high school commercial courses. It will be highly important, in case intermediate schools with commercial courses are established, that commercial instruction appropriate to the age, capacity, and vocational needs of the pupils be determined. What this will prove to be we are not prepared to state. Subsequent investigations must deal with this important question; but we do recommend that special "field" studies into actual business conditions be an important element of any plans that may be adopted.

Need of a Special Commercial School in Jamaica

While investigating commercial courses in the Jamaica and Richmond Hill high schools, the attention of the investigator was directed to a recommendation of one of the principals that a special commercial high school should be located at some point convenient to both districts, into which the commercial pupils of each school could be collected. We approve this recommendation, believing, as the general tenor of our report indicates, that specialization, segregation, and concentration make for increased efficiency in all lines of vocational work.

Summary and Recommendations

1. The contemporary conception of commercial education in New York City should be largely expanded, and should emphasize the larger and more important aspects of commercial activities, such as merchandising, salesmanship, business organization, and advertising (see pp. 29-34).
2. A temporary special commission should be created to consist of commercial teachers temporarily detached from teaching service, who should coöperate with business experts, and examine into business conditions in relation to commercial education. A commission of this kind will discover a more adequate basis for commercial instruction, whether in day, evening, or in continuation schools, than the city now has. The partial studies presented in this report regarding business conditions affecting commercial education can with profit be carried on until clearer and more positive conclusions can be reached.
3. There should be a council of chairmen of commercial departments in high schools to study, weigh, and recommend to the Depart-

ment of Education¹ improvements in courses and methods pertaining to commercial education; in other words, there should be a definite agency, officially recognized, for the organization and unification of educational experience in the field of commercial education.

4. The sexes in commercial courses should, wherever possible, be separated. The training for each sex should be differentiated in accordance with the differing tastes and aptitudes of boys and girls, and the different vocational demands which each will meet.

5. The regents' tests for commercial subjects and related academic subjects should be abandoned to give larger scope for objective standards drawn from the business world (see p. 44).

6. Teachers of academic subjects in commercial courses and in special commercial schools should possess, either through actual business experience or through theoretical study, or both, a knowledge of and a sympathy with the proper ideals of commercial education. To this end there should be separate eligible lists for all teachers giving instruction in commercial schools and courses (see p. 43).

7. There should be a supervisor of commercial work for all grades, whether in intermediate schools, evening and continuation schools, or in day schools. There should be a unified policy throughout the whole range of the work. The divided attention of a number of general supervisors, some concerned with day schools and others concerned with evening schools, can yield neither unified policy nor comprehensive treatment.

8. Special teachers should be appointed to act as field agents for commercial schools and courses. These teachers may be called vocational assistants and should perform duties in connection with commercial education similar to those of "coördinators" in connection with industrial education. See Dean Schneider's report.

9. Coöperative relations between commercial schools and commercial houses should be sought and established. Teachers and business men must unite upon a common plan. That New York City business men realize the importance of such coöperation is shown by the Chamber of Commerce in appointing a special committee on commercial education. Other commercial bodies should adopt a similar policy. Business men must share the burden of education with the state, and must share this burden in a direct way by giving opportunity for participation in practice during the period of school training. Advisory committees of business men (with advisory functions only) should be established to guide and counsel commercial schools on the one hand, and, on the other, to awaken business men generally to a sense of their responsibilities with respect to commercial education. It is only by an equal partnership of the schoolmaster and the business man that the problem can be solved in a comprehensive and effective way. Up to the present time the schoolmaster has borne more than his share in the attempted solution of the problem.

¹ Board of Superintendents and Board of Education.

ADMINISTRATION OF THE HIGH SCHOOL

CORRESPONDENCE BETWEEN THE COMMITTEE ON SCHOOL
INQUIRY AND DR. FRANK W. BALLOU CONCERNING DR.
BALLOU'S REPORT.

Letter from Chairman of the Committee on School Inquiry to Dr. Frank W.
Ballou proffering questions.

AUGUST 23, 1912.

DR. FRANK W. BALLOU,
Pottdam, New York.

DEAR SIR:—The Committee on School Inquiry, after reading the galley proof of your report rendered to it, feels that the report might be strengthened in certain particulars as to which it desires to offer you the following suggestions with the request that you supplement your report as indicated. If you are able to amend and supplement the report as desired, the Committee requests that you be good enough to forward to it typewritten amendments to the galley proof now in hand, which the Committee will then transmit to the printer for new galley.

1. Please furnish a statement showing at the end of each term the actual progress made by pupils in the same grade and subject who were members of large sections, and the same data for pupils who were members of small sections (galley 321).

2. Please state to what extent the size of school rooms is a factor in determining the size of sections (galley 321).

3. Please give the actual figures which prove that the small number of pupils in upper grades is one of the main causes of small sections (galley 321).

4. Please give the facts as to the actual amount of time required for the several activities listed on galley 326 (1), and state with respect to each activity how far functional organization of work may be developed.

5. How much time is spent on supervisory work by heads of departments in the other cities to which attention is called? Is there a tendency to increase the supervisory work and to decrease the clerical work in those cities? How do the other cities compare with the City of New York in this respect?

6. Please state whether it would be possible to have the daily written work of pupils examined by members of the staff who have had less teaching experience than regular class teachers.

7. If the daily written work of pupils is examined by less experienced members of the staff, how many periods per week could each teacher give to teaching work and to better preparation for teaching the daily lessons?

8. What, if any, financial benefit would accrue to the City if the less experienced members of the staff examined the daily written work of pupils?

9. Prof. Davis recommends the increase of elective subjects offered in high schools. You recommend small high schools. How can we increase the offering of electives and at the same time develop small high schools without creating small sections which would greatly increase the cost of instruction? On the other hand, if large high schools were continued, would not more large sections, in which more elective subjects might be taught be possible? And would not the relative cost of the increase of electives be less than if small high schools were developed and Prof. Davis' recommendation carried out?

10. Why cannot high school annexes be organized practically as separate schools?

11. Is there any inherent reason why teaching work in annexes should be inferior to teaching work in main buildings? Is this not due to present defective organization?

12. You state that the principal should be in a position to know his pupils personally. Is it not impossible for a principal to actually know the 1,500 pupils who might attend small high schools? Instead of attempting to meet and advise personally with 1,500 pupils, ought not the principal to give his attention to the results of neighborhood surveys placed before him showing, under proper classification, family incomes, nationality, and home conditions of his pupils? Would not this bring the principal into more vital relation with his pupils than for him to attempt to know them all personally? Should not the teacher do the personal work and leave the principal free for administrative work? As a matter of fact, is there not an imperative need at the present time for the standardization of the work of high school principals so that they may give more time to actual supervision?

13. Your colleagues recommend that supervision should be decentralized more than at present, and that the principal should be given considerable power in modifying the course of study to meet local conditions. Would not this new work make it utterly impossible for the principal to give his attention to the personal equation? Are not the teachers the proper persons to deal with purely personal relations, since they come in direct contact with only a few pupils?

14. If proper administrative organization is built up, and the work of the high school principal is properly standardized, why could not large high schools be built in a congested city like New York, where there cannot be the same demand for the small high school as there can be in a small city where pupils must travel miles in order to reach the various schools?

Please be good enough to let me know by return mail when I may expect from you the material requested.

Respectfully,

JOHN PURROY MITCHEL,

Chairman, Committee on School Inquiry.

Memoranda on questions contained in President Mitchell's Letter of August 23, 1912 (furnished by Dr. Frank W. Ballou).

The questions have been considered in order, and classified as. a. Immaterial; b. Confusing; c. Already answered; d. Requiring further investigation; e. Unanswerable.

No. 1. Requires further investigation, which we could not have made had we had the time, because such an investigation must extend over a period of years. Hence we recommend in the report that the proper educational authorities carry on such an investigation as would answer this question.

No. 2. Immaterial, because the "extent to which the size of school rooms is a factor in determining the size of sections" varies from term to term, as the attendance fluctuates, and as additional school rooms are made available. The material fact is that the size of available class rooms is at present determining the size of sections.

No. 3. Answered in the report for certain subjects in all schools. Continuation of such a study recommended.

No. 4. Immaterial and confusing: immaterial because "the actual amount of time required" varies from term to term, hence a statement of the exact amount of time would be at best merely suggestive, and not more conclusive than a general statement. Confusing because it would cloud the minds of most readers of the report to discuss "functional organization of work."

No. 5. Requires further investigation, which could not then and cannot now be carried on; and immaterial because the results would be no more suggestive of a solution of the problems in New York City than the common observations and experiences of the specialists which have been given in the report.

Nos. 6, 7, 8. Unanswerable. Only experimentation could answer these questions. We have established the fact that there is not at present a proper differentiation of functions, and hence there is not, and cannot be, a proper assignment of them. We have recommended that the school authorities classify the various functions to be performed, after which their assignment would be comparatively a simple matter. The suggested assignment of work in this question could properly be considered by the educational authorities as one to be experimented with; the question cannot be answered at present because there are no facts.

No. 9. We do not "recommend small high schools" as you state. We do recommend smaller high schools than are at present found in

New York City. Even the adoption of our recommendation that high schools be limited to 1,500 pupils would still leave New York City with high schools much larger than are found elsewhere in the country.

Nos. 9, 10, 11, 12, 13, 14. Answered as fully in the report as educational practice and experience can answer them. The statements in the report, on the size of high schools, are based on established facts wherever such facts are available, otherwise on the best available educational opinion. To attempt to answer in the report all of the questions raised in President Mitchel's letter (Nos. 9, 10, 11, 12, 13, 14) would involve us in an endless theoretical discussion which would impair rather than increase the efficiency of the report.

To summarize: I find no questions the answers to which would strengthen our report. On the contrary, the answers to several of them would tend to cloud rather than clear the issue. I have classified the questions as follows:

a. Immaterial	3
b. Confusing	1
c. Already answered	7
d. Require further investigation.....	2
e. Unanswerable	3

REPORT ON
EDUCATIONAL ASPECTS OF THE
PUBLIC SCHOOL SYSTEM
OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY
OF THE BOARD OF ESTIMATE
AND APPORTIONMENT

PART II

Subdivision III

High Schools

SECTION C.—PROBLEMS IN ORGANIZATION AND ADMINISTRATION

- I. The Size of Sections (Classes)
- II. The Work of Chairmen of Departments
- III. The Work of Teachers
- IV. Administrative Control of the High Schools
- V. Estimating the Need of High School Teachers

BY

FRANK W. BALLOU, PH.D.

Director of School Affiliation and Assistant Professor of Education, University of Cincinnati

CITY OF NEW YORK
1911-1912

(I) THE SIZE OF SECTIONS (CLASSES)

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(I) THE SIZE OF SECTIONS (CLASSES) IN THE HIGH SCHOOLS

Introduction

1. A Committee of the Board of Superintendents

The high school system of New York City is under the direction of one of the Associate City Superintendents, who is chairman of the Committee on High Schools of the Board of Superintendents. A district superintendent is also assigned to the high schools, so that the twenty high schools and twenty-one annexes in New York City are under the supervision and direction of these two officials. All matters pertaining to the high schools, such as courses of study and the appointment and transfer of high school teachers, reach the Board of Superintendents through the Committee on High Schools. On the other hand, matters directly presented to the Board of Superintendents are referred to this committee for reports and recommendations.

Naturally, the general administration of the high schools by this committee bears a direct relation to the detailed organization of each school. In addition to directing the matters already referred to, the Associate City Superintendent in charge of high schools fixes the standard size of recitation sections and the standard number of periods of teaching per week, according to which the principals of the high schools are expected to organize their schools.

2. The Principals as Executive Heads

The principals of the high schools are, by the by-laws of the Board of Education, the executive heads of their respective schools and are directed to organize and administer them under the direction of the Board of Superintendents. A principal's activities are thus limited to the details of organization, administration, and supervision within his school. Thus the merit system of appointing teachers,¹ as it exists in New York City, gives the principal no part in the selection or appointment of teachers; he has to take the first teacher on the list of eligible candidates. The amount of teaching which a first assistant, or a teacher in a given department, shall do after appointment is determined by the standards fixed by the Board of Superintendents. The size of recitation sections in the various terms is determined by the Board of Superintendents. The

¹The Charter provides (Section 1091, Title I, Chapter XVIII) that a teacher nominated by the Board of Superintendents shall be from among the first three on a list of eligible candidates. In actual practice, the Board of Education practically requires (Section 40, Paragraph 9) that the first person on the list be nominated.

course of study and syllabi are prepared, and time allotments fixed by the Board of Superintendents, with such assistance as the board sees fit to invite, there being no regular channel through which views of the teachers and principals reach the Board of Superintendents. Supplies and text books are ordered by the principal, but from a list approved by the Board of Superintendents. The principal is expected to make the best possible use of the facilities at his disposal, to carry out the prescribed course of study, and, in general, to organize his school in accordance with the regulations of the Board of Superintendents as nearly as conditions will permit.

3. The First Assistants

The principals of the high schools may be assisted in the administration of their respective schools by teachers having the rank of first assistants. A first assistant is made chairman of a department of study wherever possible, and, as such, is charged with the general direction of the work of the department. In addition, the first assistant is a general administrative officer under the direction of the principal. According to the by-laws of the Board of Education, principals may also, with the approval of the City Superintendent of Schools, assign administrative work to teachers.

(I) The Size of Sections¹ (Classes)

Among the topics pertaining to the internal organization of the high schools, the size of sections and the work of teachers are of fundamental importance. The size of sections is important educationally, because the size of section affects the character of the instruction. If the section is too large, the teacher cannot give the essential individual attention to each member of the class. If the section is too small, the pupils lose the important results accruing from an association with other pupils solving common problems. The size of sections is important economically, because fewer teachers will be required if pupils are distributed in sections of forty pupils than if distributed in sections of thirty pupils. If the sections are large, the number of sections to be taught will be smaller; hence, fewer teachers would apparently be needed. If the sections are small, the number of sections to be taught will be larger, resulting in the apparent need of a larger number of teachers. It is obvious that the size of sections and the amount of teaching to be done are not only of fundamental importance, but are inseparably connected.

¹ This study of the size of sections was undertaken as the result of a question in President Mitchel's letter of June 14, 1911, as follows: "What is the largest practical size for a class in high schools? a. Are there classes where twenty should be the maximum? b. Are there others where thirty is the maximum?"

Table to Show the Size of Sections in German and the Number of Sections of Each Size

x^1	=	One section with 6 pupils.
x^2	=	" " " 5 "
x^3	=	Two sections " 7 " each.
x^4	=	" " " 7 " "



1. What Constitutes Effective High School Organization?

If the high schools were most effectively organized as to sections, all sections would be approximately of satisfactory size for doing effective work. If the sections in the various high schools were organized according to a given standard, a typical study of that organization ought to show that the sections in a school or in a given term group themselves around that standard. For example: If the standard size of section is thirty pupils,¹ and if there are pupils enough for two or more sections, the actual size of the sections in a given term could reasonably be expected to vary, in practice, from possibly twenty-eight to thirty-three or thirty-five pupils. German and mathematics have been selected as typical subjects for our study because they are found in all of the high schools, and are offered under as uniform conditions as to time allotments, as are any subjects.

2. The Size of Sections in German and Mathematics in the City as a Whole—Typical Study²

Table I shows the size of sections in German in the high schools of New York City, and the number of sections of each size, in the February-June term, 1911. (See insert opposite.)

Table II shows the size of sections in mathematics³ in the high schools of New York City, and the number of sections of each size, in the February-June term, 1911. (See insert opposite page 22.)

The number of sections in German in each school is given in the first column after the name of the school. At the top of the table is a scale from "10" to "65," representing the size of sections. In the vertical column, under each number in the scale, is given the number of sections of that size in the various high schools. At the foot of the table are the totals for the city.

The heavy line drawn through the table from top to bottom divides the number of sections in each school, and the total for the city into two approximately⁴ equal parts. For example: The line drawn so as to

¹We shall here accept the standard of thirty pupils per section, and leave the discussion and defense of this standard to a later part of this report.

²Typical as to method of treatment and kind of study which should regularly be made.

³The discussion of the size of sections will be confined to German; the mathematics table, which is here introduced, shows the same facts and points to the same general conclusions.

⁴"Approximately," because it is exact only in case it happens to be possible to divide the number of sections in each school into two equal parts and also in case the number of sections either side of the point where the line will cross is "1." For example: There are thirty-five sections in DeWitt Clinton High School, one-half of which is seventeen and one-half. To divide the series of numbers referring to DeWitt Clinton into two *equal* parts would necessitate dividing the one section in column "34" into two halves. Further, in the case of Morris High School, there are fifty-four sections in German, of which twenty-seven is one-half. To divide the series of

divide the total number of sections in German in the New York City high schools into two approximately equal parts, if extended, would cross the scale at the top of the table between "31" and "32." This shows therefore, that there are in New York City as many sections with thirty-two or more pupils as there are with less than thirty-two pupils. The line is so drawn through the table as to show the same facts for each school as are shown for the city as a whole.

The table shows (1) that there are small sections in every high school; (2) that there are large sections in every high school; (3) that there is great variation in the size of sections among the different high schools; (4) that the size of sections for the city as a whole does not sufficiently approximate a standard; and (5) that the size of sections in individual schools does not sufficiently approximate the established standards.

(1) Small Sections in Every High School

All high schools have sections with twenty-five pupils or less; all high schools, except Newtown, have sections with twenty pupils or less; all high schools, except Newtown and Erasmus Hall, have sections with eighteen pupils or less; all high schools, except Newtown, Erasmus Hall, Commercial, and Bushwick, have sections with seventeen pupils or less. There are also sections with five, six, and seven pupils.

(2) Large Sections in Every High School

All high schools have sections with thirty-eight pupils or more; all high schools, except Curtis, have sections with thirty-nine pupils or more; all high schools, except Curtis, Boys', and Flushing, have sections with forty-four pupils or more. There are also sections with fifty, fifty-five, sixty, and sixty-five pupils.

(3) Great Variation in Size of Sections Among High Schools

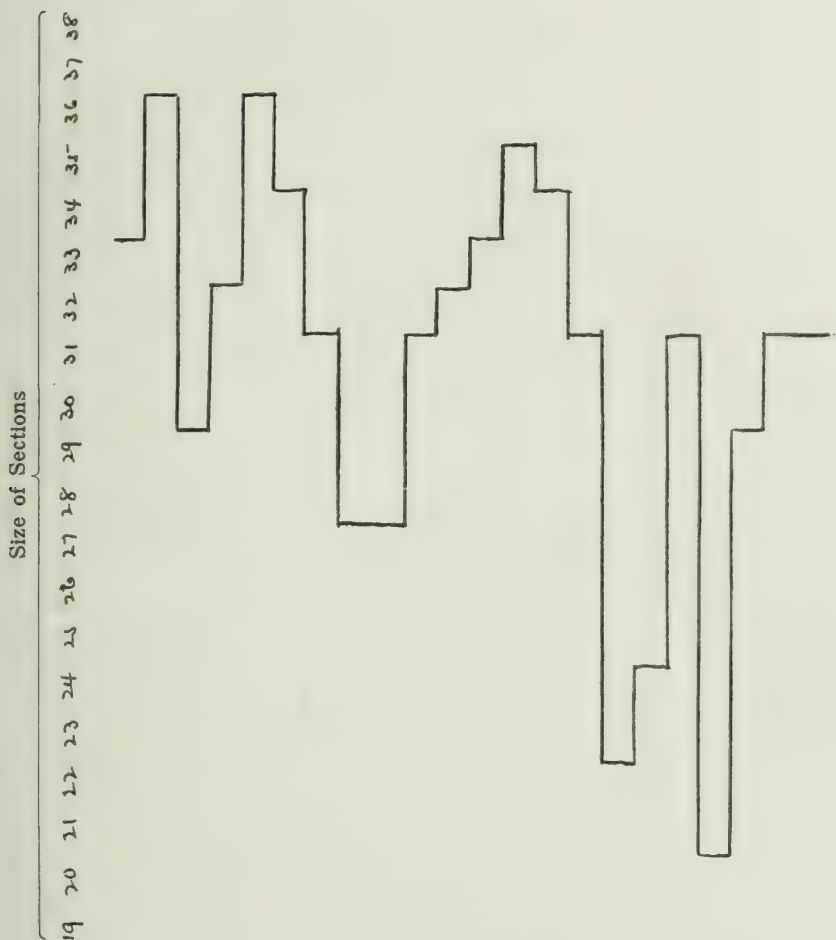
In Table I, the heavy line divides the number of sections in German in each high school into two approximately equal parts. The following chart (which is a copy of Table I, with the figures omitted) shows that the heavy line crosses the numerical series for the various schools at many different points:

numbers into two *equal* parts would mean that the number "4" under the size of section "35" would have to be divided into "1" and "3," the "1" of which would be counted with the numbers at the left, and the "3" of which would be counted with the numbers at the right. To obviate these two difficulties, the line has been drawn in every case where it exactly divided the number of sections into two *equal* parts or at the left of the number which would have to be divided to make an *equal* division.

Table to Show the Size of Sections in Mathematics and the Number of Sections of Each Size

$x^1=1$	section with 6	pupils.
$x^2=1$	"	" 9 "
$x^3=1$	"	" 8 "
$x^4=1$	"	" 7 "
$x^5=2$	sections	" 6 "
$x^6=1$	section	" 2 "

Diagram I



High Schools
 De Witt Clinton
 H.S. of Commerce
 Stuyvesant
 Washington Irving
 Morris
 Girls
 Boys
 Erasmus Hall
 Manual Training
 Commercial
 Eastern District
 Bushwick
 Bryant
 Newtown
 Flushing
 Far Rockaway
 Jamaica
 Richmond Hill
 Curtis
 City as a whole.

The extremes of the variation are shown by the fact that the line passes between twenty and twenty-one in the case of Richmond Hill High School and between thirty-six and thirty-seven in the cases of the High School of Commerce and Washington Irving High School.

Not only are there differences among the schools in the point at which the heavy line divides the number of sections in each school, but there is also no considerable number of schools which are divided between the same sizes of sections. Table III shows that the number of sections in each school is divided between the same numbers in only four of the twenty high schools:

Table III

SIZE OF SECTION (AT RIGHT OF HEAVY LINE)

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Number of schools divided at that point	1	0	1	0	1	0	0	2	0	2	0	4	2	2	2	1	2

(4) The Size of Sections for the City as a Whole Does Not Sufficiently Approximate a Standard

The size of sections in both the small and the large high schools ranges from a very small number of pupils to a very large number of pupils. For the city as a whole, the smallest section is five pupils, and the largest section is sixty-five pupils. Hence, it will be observed that the range of size of sections for the city as a whole is very great. Taking the totals of the city as a whole, as shown in Table I, it will be seen that, beginning with the size of section "25," the number of such sections is conspicuously larger and continues so to size of section "40." In other words, the most conspicuous sizes of section for the city as a whole are from twenty-seven sections with twenty-five pupils each, to twenty-three sections with forty pupils each, without any one size between these extremes being conspicuously common. Between these limits of twenty-five and forty in the scale are found 71.34 per cent. of the sections in German. If we apply the standard fixed by Associate City Superintendent Stevens (viz., thirty to forty pupils per section) to the city as a whole, we find that only 51.68 per cent.—a bare majority—of the sections in German are within the limits of that standard.

It should be stated that the range of size of sections which is most conspicuous for the city as a whole (twenty-eight to forty pupils), as well as the range of size of sections which is fixed by Associate City Superintendent Stevens for the combined terms (thirty to forty pupils), is too great. With the large number of pupils in the Department of German in most high schools, sections ought to be so organized that a larger number of sections will come within the limits of a narrower standard.

(5) The Size of Sections in Individual Schools Does Not Sufficiently Approximate the Established Standards

Associate City Superintendent Stevens¹ directs principals to organize first term sections with as many as forty pupils each, and all other sections with from thirty to thirty-five pupils each. In order to measure the practice in the schools by these standards, it is necessary to separate first term sections from sections in other terms. Therefore, our discussion will be divided into two parts, (a) sections in first term, and (b) sections in the second to eighth terms, inclusive.

a. Sections in First Term²

Table IV shows for each school the per cent. of sections containing less than thirty pupils,³ from thirty to forty pupils, and over forty pupils:

Table IV

HIGH SCHOOLS	Below 30 Pupils	30-40 Pupils	Over 40 Pupils
DeWitt Clinton.....	.....	66.67	33.33
H. S. of Commerce.....	15.38	53.85	30.77
Stuyvesant.....	20.00	73.33	6.67
Wadleigh.....	25.00	75.00	.....
Washington Irving.....	4.76	52.38	42.86
Morris.....	6.25	56.25	37.50
Girls'.....	30.00	40.00	30.00
Boys'.....	50.00	50.00	.....
Erasmus Hall.....	83.33	16.67	.....
Manual Training.....	11.11	77.78	11.11
Commercial.....	16.67	83.33	.....
Eastern District.....	.....	57.14	42.86
Bushwick.....	.....	60.00	40.00
Bryant.....	.....	83.33	16.67
Newtown.....	.....	75.00	25.00
Flushing.....	.....	100.00	.....
Far Rockaway.....	.....	.....	100.00
Jamaica.....	50.00	33.33	16.67
Richmond Hill.....	20.00	80.00	.....
Curtis.....	66.67	33.33	.....
City.....	17.49	61.75	20.76

¹ Statement made at a conference with Associate City Superintendent Stevens in his office, November 15, 1911.

² The tables on which Tables IV and V are based have been filed with the Committee on School Inquiry.

³ Inasmuch as Associate City Superintendent Stevens set no minimum size for first term sections, we have adopted the minimum fixed for other terms, even though this sets up a standard with wide limits. These wide limits will partially account for the fact that schools more nearly approximate this standard than they do the standard in the upper terms.

This table shows that some schools are approximating the established standard—thirty to forty pupils—rather closely in first term sections. For example: 75 per cent. of first term sections in German in Wadleigh High School range from thirty to forty pupils per section. In Manual Training High School, the percentage of sections between thirty and forty pupils is 77.78 per cent. In Commercial High School, the percentage of sections conforming to the standard is 83.33 per cent. In the smaller schools, we would expect to find a somewhat greater variation from the standard than in the larger schools, where the principals can control more directly the size of section, owing to the larger number of pupils in first term. Nevertheless, in Flushing High School, where there are only four sections of first term German, all of them come within the limits of the standard. In Richmond Hill High School, 80 per cent., or four out of five of the first term sections, are within the limits of the standard.

On the other hand, in Erasmus Hall High School, 83.33 per cent. of the sections in first term German contain less than thirty pupils; in Curtis High School, two-thirds of the sections, or 66.67 per cent., contain less than thirty pupils. Further, in Eastern District High School, 42.86 per cent. of the sections in first term work contain over forty pupils.

For the city as a whole, it will be observed that 61.75 per cent. of first term sections in German are organized within the limits of the standard; 17.49 per cent. of the sections contain less than thirty pupils, and 20.76 per cent. contain over forty pupils. There are seven high schools with no sections below thirty pupils in first term work; on the other hand, there are seven high schools with no sections with over forty pupils. In general, therefore, it is seen that a fair majority of the sections in first term German are organized within the limits of the standard fixed by Associate City Superintendent Stevens for first term sections, and that there are more sections with over forty pupils than there are with less than thirty pupils.

We have been measuring the practice in the schools by the established standard. It should be pointed out here that the practice of organizing first term pupils into sections of forty or more pupils must be emphatically condemned. The establishment of this rule that first term pupils be organized into sections larger than sections in other terms has grown out of an effort on the part of the Board of Superintendents to maintain a uniform "average number of pupils per teacher" in the various schools of the city. As has been pointed out elsewhere,¹ sections in the upper terms are likely to be unavoidably small. In order to offset this inevitable condition, and produce a fair "average number of pupils per teacher," the sections of first term pupils are now made exceptionally large. Further, the number of pupils in first term classes, compared with the number of pupils in upper classes, seems to make it economically necessary to make sections in first term comparatively large. From an edu-

¹ See p. 81.

cational point of view, there is no reason why the sections in first term should be larger than sections in other terms, and there are many reasons why they should not be. For example: The pupils need more individual attention when they first enter high school than at any subsequent time; their work is all new; they have more teachers to become accustomed to; and they are soon lost if thrown too much on their own responsibility.

Some of the first term sections with less than thirty pupils, shown in Table IV, are unavoidable,¹ because there was only one section which contained all of the pupils in that term. Some of these small sections are due to a division of one large section into two comparatively small ones, the two small ones containing all of the pupils doing that term of work. These sections should be considered unavoidable and hence defensible. There are, however, as a matter of fact, in the high schools of the city, only two such sections in first term. In other words, 6.25 per cent. of the sections with less than thirty pupils are unavoidable, leaving 93.75 per cent. of the small sections avoidable² through a redistribution of pupils.

Considering the first term sections with over forty pupils in the same manner, we find that, of the 20.76 per cent. of the sections with over forty pupils, 5.26 per cent. of those sections were unavoidable, and 94.74 per cent. of them were in schools where a redistribution of pupils would have made it possible to reduce their size. Although we are not here fundamentally concerned with the financial consequences of reducing these large sections, it should be pointed out that some of these large sections can be reduced by a redistribution of pupils, but most of them can be avoided only by the employment of additional teachers.

b. Sections in the Second to Eighth Terms, Inclusive

Table V shows for each school the per cent. of sections containing less than thirty pupils, from thirty to thirty-five pupils, and over thirty-five pupils. (Table V is on page 80.)

This table shows that most of the schools are not approximating the standard of from thirty to thirty-five pupils per section in German above the first term. For example: In Stuyvesant High School, 51.61 per cent. of the sections contain less than thirty pupils; in Wadleigh High School, 40 per cent.; in Boys' High School, 60 per cent.; in Erasmus Hall High School, 66.67 per cent., and in Richmond Hill High School, 70.59 per cent. On the other hand, in the High School of Commerce, 42.85 per cent. of the sections in German above the first term contain more than thirty-five pupils; in Commercial High School, 35.48 per cent.; in Bryant

¹ This discussion of avoidable and unavoidable sections is based on tables filed with the Committee on School Inquiry, and not on tables included here. These tables were similar to those of selected schools on pp. 92, 98, 102.

² Provided the conditions in the school determining the size of section are within the principal's control, see p. 16 and note.

Table V

High Schools	Below 30 Pupils	30-35 Pupils	Over 35 Pupils
DeWitt Clinton.....	46.15	23.08	30.77
H. S. of Commerce.....	38.10	19.05	42.85
Stuyvesant.....	51.61	19.26	29.03
Washington.....	40.00	30.00	30.00
Washington Irving.....	29.41	31.37	39.22
Morris.....	39.47	34.21	26.32
Girls'.....	43.33	33.34	23.33
Boys'.....	60.00	30.00	10.00
Erasmus Hall.....	66.67	23.81	9.52
Manual Training.....	41.82	40.00	18.18
Commercial.....	38.71	25.81	35.48
Eastern District.....	32.50	40.00	27.50
Bushwick.....	60.00	10.00	30.00
Bryant.....	33.33	33.34	33.33
Newtown.....	45.46	27.27	27.27
Flushing.....	100.00	.....	.....
Far Rockaway.....	80.00	20.00	.....
Jamaica.....	33.33	33.34	33.33
Richmond Hill.....	70.59	17.65	11.76
Curtis.....	46.67	46.67	6.66
City.....	44.82	29.60	25.58

High School, and Jamaica High School, 33.33 per cent. of the sections in each contain over thirty-five pupils.

The figures for the city as a whole indicate fairly well the conditions in each school. In the city as a whole, 44.82 per cent. of the sections in German contain less than thirty pupils; 29.60 per cent. contain from thirty to thirty-five pupils, and 25.58 per cent. contain more than thirty-five pupils. It is, therefore, obvious that the sections in German above the first term are not now organized in accordance with the standard of thirty to thirty-five pupils. This is true of the city as a whole, and is true of every individual high school. Further, there is no high school in the city where a majority of the sections in German above the first term are organized in accordance with the standard. The largest per cent. of sections between thirty and thirty-five pupils in any one school is in Curtis High School, where 46.67 per cent. of the sections range from thirty to thirty-five pupils.

Of sections with less than thirty pupils, we find that, of the 44.82 per cent., 24.53 per cent. were unavoidable, because they contained all of the pupils in the given term. This leaves 75.47 per cent. of these sections with less than thirty pupils in terms where a different distribution of pupils would have made it possible to avoid them.

Of the sections with over thirty-five pupils, 4.13 per cent were unavoidable, and 95.87 per cent. were in terms where a different distribution of pupils or the employment of additional teachers would have made it possible to reduce their size.

3. Size of Sections in German in Selected Schools

(1) Important Facts Which Table I Does Not Show, and Which Can Be Shown Only by Further Detailed Study

However, Table I does not show whether the small or the large sections are inevitable, and hence defensible and justifiable, or whether they could be avoided by a different distribution of pupils. If the large section is the only section in a given term, and to divide it would mean two very small sections, such a section is justifiable. If a small section contains all of the pupils doing that term's work, it is obvious that such a section is inevitable and justifiable. On the other hand, if very small sections and very large sections are found in any given term, it is important to ascertain the reason. The reason may be found in the way the daily program is made, responsibility for which rests on the principal; or it may be found in other factors¹ over which the Department of Education has exclusive control. To see to what extent the exceptionally large or exceptionally small sections are unavoidable, or whether they could have been avoided by a better distribution of pupils, assuming that the factors outside the principal's control are favorable, it is necessary to know the size of sections by terms for each school and annex. To include in this report all the tables giving these data would extend it unreasonably. Such tables have been filed with the Committee on School Inquiry. Our discussion will be limited to a few types, to illustrate the kind of material which such tables contain, and also to show the worth of it for administrative, as well as supervisory, purposes.

In the following study, the sections in each school will be measured by the established standard size of section, after which attention will be given to the following points concerning the sections in each term: The range of size of section; the average size of section as organized; the desirability of increasing the number of sections to reduce the number of large sections; and the possible combination of sections to reduce the number of small sections.

(2) Detailed Study of Sections in Selected Schools

Table VI shows the size of sections in German in Morris High School by terms, and the number of sections of each size, in the February-June term, 1911. (Table VI is on page 82.)

Morris High School is selected for study because it is typical of a large majority of the high schools in New York City as to courses of study offered, size of school, and size and number of classrooms. The organization of sections in the school in this, and the following cases,

¹ These factors are the program of studies, the size of the school, the size and number of classrooms, and the number of teachers employed.

Table VI

Terms	No. of Sec- tions	SIZE OF SECTIONS																																													
		15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46														
1	7	..	..	..	..	..	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	..	4	..	2	1	..	..	..	..	..	..	..	..					
2	9	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	1	1	1	1	..	..	..	..	1	..	..	..	1
3	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	2	..	1	..	..	..	..	..	..	..	..	..				
5	4	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..		
6	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..		
8	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals.	36	1	1	..	..	..	1	..	..	..	1	1	..	3	1	1	3	1	..	3	4	6	1	5	1	..	1	..	..	..	..	..	1			

will be considered from the standpoint of (a) the school as a whole, and (b) each term within the school.

(a) The School as a Whole

Comparing the size of sections in Morris High School with the established standards, we find:

1. That 100 per cent. of the first term sections are within the limits of the established standard—thirty to forty pupils.
2. That 41.38 per cent. of the sections in other terms are within the limits of the established standard—thirty to thirty-five pupils.
3. That 31.03 per cent. of the sections contain less than thirty pupils, of which 33.33 per cent. are unavoidable, and 66.67 per cent. are avoidable through a different distribution of pupils.¹
4. That 27.59 per cent. contain more than thirty-five pupils, all of which are avoidable.

If we measure the sections in Morris High School by the proposed standard of thirty pupils per section, and take twenty-eight and thirty-five as the minimum and maximum limits of that standard, we find:

1. That 44.44 per cent. of the sections in all terms are within the limits of this standard.
2. That 13.89 per cent. of the sections contain less than twenty-eight pupils, of which 60 per cent. are unavoidable, and 40 per cent. are avoidable through a different distribution of pupils.
3. That 41.67 per cent. contain more than thirty-five pupils, all of which are avoidable through a different distribution of pupils.

If the sections in German in Morris High School did approximate the established standard, we would expect to find a considerable majority

¹ Provided conditions in the school determining the size of sections are within the principal's control. This provision not only applies in this case, but also to similar statements made in the following pages.

of the sections between twenty-eight and thirty-five pupils; a very small number of sections with more than thirty-five pupils per section, and a very small number of sections with less than twenty-eight pupils. Hence, except in first term, sections do not approximate closely the established standard size.

(b) Each Term Within the School

First Term. There are seven sections of first term German, ranging in size from thirty-six to thirty-nine pupils, with an average of 37.0 pupils per section. The range of the size of sections is satisfactory, because they do not differ materially in size. The average size of section is too large; there should have been one more section formed, thereby reducing the average number of pupils per section to 32.3, and correspondingly reducing the actual size of each section.

Second Term. There are nine sections, ranging in size from twenty-five to thirty-eight pupils, with an average of 31.9 pupils per section. The range of the size of sections is too great, and the question is raised why these sections were not made more uniform in size. The average size of section is reasonable, but there are some sections too large and some sections smaller than they need be for effective work.

Third Term. There are five sections, ranging in size from twenty-eight to forty-six pupils, with an average of 36.6 pupils per section. The range of the size of sections is too great. Also, the average size of section is too large. One more section should have been formed, thereby reducing the average number of pupils per section to 30.5.

Fourth Term. There are five sections, ranging in size from thirty-one to thirty-eight pupils, with an average of 34.6 pupils per section. This is probably as effective an organization as could be made, both from the standpoint of the range of size of sections and the average number of pupils per section. Another section would have reduced the average too much, and the range of the size of section is not bad.

Fifth Term. There are four sections, ranging in size from twenty-one to thirty-six pupils, with an average of 29.2 pupils per section. The range of the size of sections is too great, but it is obvious that the average size of section is the best that could be provided in view of the fact that fewer sections than four would have made each section altogether too large.

Sixth Term. There are four sections, ranging in size from thirty-one to thirty-five pupils, with an average of 33.0 pupils per section. This organization is satisfactory, both from the standpoint of range and the average size of sections.

Seventh Term. There is one section of fifteen pupils, which, of course, is the best that could be arranged, inasmuch as it includes all of the pupils in this term.

Eighth Term. There is one section of sixteen pupils, which, of course, could not be improved upon, because all of the pupils in eighth

term are in this section. There is a possibility of a combination of seventh and eighth term sections, but such a combination might be unsatisfactory because of the size of the resulting section, or impossible for administrative reasons.

The important points in this discussion of the sections in Morris High School are:

1. The number of sections in the first six terms of German is four or more. The size of section, therefore, depends, to some extent, upon how the principal distributes the pupils. In the seventh and eighth terms there is only one section in each term.
2. The average size of section is:
 - a. Altogether too large in the
first term (37.0)
third term (36.6)
 - b. Nearly the maximum size in
fourth term (34.6)
sixth term (33.0)
 - c. Satisfactory in the
second term (31.9)
fifth term (29.2)
 - d. Unavoidably small in the
seventh term (15.0)
eighth term (16.0)
3. The range of the size of sections is:
 - a. Satisfactory in the
first term (36 to 39)
fourth term (31 to 38)
sixth term (31 to 35)
 - b. Unsatisfactory in
second term (25 to 38)
third term (28 to 46)
fifth term (21 to 36)
4. As a result of the facts revealed, additional sections would be recommended in the first and third terms to reduce the size of sections. It is also worth pointing out that there was a possibility of combining the two sections in the seventh and eighth terms of work. In this reorganization, therefore, it would have been necessary to make only one additional section, or two in case it was impossible, for administrative reasons, to unite the sections in the seventh and eighth terms. No additional teachers would have been needed, provided the programs of teachers already employed were not already heavy.

Table VII shows the size of sections in German in the Boys' High School by terms, and the number of sections of each size, in the February-June term, 1911:

Table VII

Terms	No. of Sections	SIZE OF SECTIONS																																						
		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39									
1	10	..	..	..	..	..	..	..	1	1	..	..	..	..	..	2	..	1	..	..	1	..	3	..	..	..	1	..	..	..	..	..			
2	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	2	..	..	..	..	..	..	1	..	1	..
3	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	
4	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	..	..	2	..	..	..	..	..	..	1
5	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
6	3	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
8	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals.	30	1	..	..	..	..	..	..	2	1	..	..	..	..	..	5	3	3	1	1	3	2	3	2	..	..	1	..	1	1	1	

Boys' High School is selected for study, because it has been shown in Table I that the size of sections in this school is relatively small.

(a) The School as a Whole

Comparing the size of sections in Boys' High School with the established standards, we find:

1. That only 50 per cent. of the first term sections are within the limits of the established standard—thirty to forty pupils.
2. That 50 per cent. of the sections contain less than thirty pupils, all of which are avoidable.
3. That there are no sections containing more than forty pupils.
4. That 30 per cent. of the sections in other terms are within the limits of the established standard—thirty to thirty-five pupils.
5. That 60 per cent. of the sections contain less than thirty pupils, of which 50 per cent. are unavoidable, and 50 per cent. are avoidable through a different distribution of pupils.
6. That 10 per cent. of the sections contain more than thirty-five pupils, all of which are avoidable.

If we measure the sections in Boys' High School by the proposed standard of thirty pupils, and take twenty-eight and thirty-five as the minimum and maximum limits of that standard, we find:

1. That 40 per cent. of the sections in all terms are within the limits of this standard.
2. That 50 per cent. of the sections contain less than twenty-eight pupils, of which 33.33 per cent. are unavoidable, and 66.67 per cent. are avoidable through a different distribution of pupils.

3. That 10 per cent. of the sections contain more than thirty-five pupils, all of which are avoidable through a different distribution of pupils.

It is interesting to note that twenty-three out of thirty, or 76.67 per cent. of the sections in German in Boys' High School are organized according to a standard, of which twenty-five is the minimum and thirty-three is the maximum number of pupils. This shows that a school can be organized approximately within the limits of such a standard. The criticism of this organization is, first, that the standard, as here shown, does not approximate the established standards for the city, and, second, that the standard here shown is unnecessarily low.

(b) Each Term Within the School

A study of the size of sections by terms in Boys' High School, similar to the study made of Morris High School,¹ leads to the following conclusions:

1. The number of sections in each of five terms is three or more. In one term, the fifth, there are two sections; in the seventh, there is one section, and in the eighth, there are no pupils. Hence, in most terms the size of section depends on how the principal distributes the pupils.
2. The average size of section is:
 - a. Not too large in any term.
 - b. Not up to the maximum in any term.
 - c. Satisfactory in the
 - second term (30.4)
 - third term (30.2)
 - fourth term (29.7)
 - sixth term (27.0)
 - d. Unavoidably small in the
 - fifth term (22.0)
 - seventh term (10.0)
 - e. Unnecessarily small in the
 - first term (27.6)

That the average of 27.0 pupils in the sixth term is considered *satisfactory*, and an average of 27.6 pupils in the first term *unsatisfactory*, should be explained. This is because, in the sixth term there were only three sections and the average could not be raised, whereas, in the first term, there were ten sections and that number of sections could be reduced by one without making sections too large.

¹ See pp. 81, 82, 83.

3. That there are no sections containing more than forty pupils.
4. That 17.05 per cent. of the sections in other terms are within the limits of the established standard--thirty to thirty-five pupils.
5. That 70.59 per cent. of the sections contain less than thirty pupils, of which 39.77 per cent. are unavoidable, and 69.23 per cent. are avoidable through a different distribution of pupils.
6. That 11.76 per cent. of the sections contain more than thirty-five pupils, all of which are avoidable.

If we measure the sections in Richmond Hill High School by the proposed standard of thirty pupils per section, and take twenty-eight and thirty-five as the minimum and maximum limits of that standard, we find:

1. That only 31.82 per cent. of the sections in all terms are within the limits of the standard.
2. That 54.54 per cent. of the sections contain less than twenty-eight pupils, of which 33.33 per cent. are unavoidable, and 66.67 per cent. avoidable through a different distribution of pupils.
3. That 13.64 per cent. of the sections contain more than thirty-five pupils, all of which are avoidable through a different distribution of pupils.

It should be pointed out that in Richmond Hill High School, over 70 per cent. of the sections other than first term sections contain less than thirty pupils, and, further, that even with the minimum of the standard reduced from thirty to twenty-eight pupils, the per cent. below the standard is over 64 per cent. In other words, the sections in German in Richmond Hill High School are too small, whether measured by the established standards or by the proposed standard.

(b) Each Term Within the School

A study of the size of sections by terms in Richmond Hill High School, similar to the study made of Morris High School,¹ leads to the following conclusions:

1. The number of sections in each of six terms is two or more. In two terms, the seventh and eighth, there is one section in each. Hence, in most cases, the size of sections depends on how the principal distributes the pupils.
2. The average size of section is:
 - a. Not too large in any term.
 - b. Approaching the maximum in only the second term (33.2)

¹ See pp. 81, 82, 83.

- c. Satisfactory in the
first term (32.0)
 - d. Unavoidably small in
fifth term (26.0)
seventh term (7.0) (14)
eighth term (7.0)
 - e. Unnecessarily small in the
third term (22.2)
fourth term (21.3)
sixth term (13.5)
3. The range of size of section is:
- a. Satisfactory in the
fifth term (21 to 31)
(Only two sections.)
 - b. Unsatisfactory in the
first term (19 to 36)
second term (24 to 45)
third term (14 to 38)
fourth term (15 to 32)
sixth term (11 to 16)
4. By a reorganization, the work of one teacher could be saved, because the number of sections could be reduced by four without making sections too large for effective work; the large sections could be abandoned and the small sections made to approximate the standard size of section.

(3) Summary

1. To summarize our study of the organization of sections in Morris, Boys', and Richmond Hill High Schools, we may say:

- (1) That a majority of the sections in the first terms are within the limits of the established standard. (Morris, 100 per cent.; Boys', 50 per cent.; Richmond Hill, 80 per cent.)
- (2) That a large majority of the sections in other terms are outside the limits of the standard. (Morris, over 58 per cent.; Boys', 70 per cent.; Richmond Hill, over 82 per cent.)
- (3) That a large per cent. of the sections below the minimum of the established standard are avoidable through a different distribution of pupils. (Avoidable in Morris, over 66 per cent.; in Boys', 50 per cent.; in Richmond Hill, over 69 per cent.)
- (4) That all of the sections over the maximum of the established standard are avoidable through a different distribution of pupils, or by the employment of additional teachers.

2. The measurement of the organization of the high schools, as they existed in the February-June term, 1911, by the proposed standard of thirty pupils per section, with a minimum of twenty-eight and a maximum of thirty-five pupils, shows that such a standard should be adopted, particularly in order to reduce very large first term sections. This study also brings out the fact that the sections are not now organized in accordance with the established standards.

3. Summarizing the detailed study of the organization of sections in the selected schools, the following statements can be made :

- (1) There are enough pupils in German in all terms, except the seventh and eighth, to necessitate the organization of more than one section. Hence, the principal can control to some extent, the size of sections into which the pupils are distributed.
- (2) The average size of section, with few exceptions, is fairly satisfactory, except in the first term. In most cases, there are too few sections of first term pupils.
- (3) The range of the actual size of sections is generally unsatisfactory in each term. That is to say, there are small sections and large sections in the same term.
- (4) Some small sections are inevitable and, hence, defensible.
- (5) Most small sections are the result of a bad distribution of pupils by the principal.
- (6) In a few cases, large sections are inevitable and, hence, defensible.
- (7) In most cases, large sections are unnecessary and not defensible. They cannot be defended on the ground that the proper number of teachers is lacking, because it is the duty of the principals and the Board of Superintendents to secure the teachers needed.
- (8) In some cases, additional sections should have been made in the first term to reduce the size of section.
- (9) In a few cases, fewer sections could have been made without making the sections too large. In one school, of the three schools considered, one teacher could have thus been saved.
- (10) And, finally, our study has shown the facts which such a treatment of high school organization reveals, and suggests the use which can be made of them. These facts would show the principal where the organization of his school could be improved, and they would also furnish the supervisory officers with the proper information by which to judge that organization.

4. Proposed Standard Size of Sections

(1) What Is the Proper Size of Section?

It has been shown that there are very small sections in every high school in the city; that there are very large sections in every high school; that the size of sections for the city as a whole does not sufficiently approximate a standard; and that the size of sections in individual high schools does not sufficiently approximate the established standards. Hence, it is natural to raise the question: What is the proper size of a recitation section in high school work? Sections in German have been found with as few as five pupils,¹ and with as many as sixty-five pupils.² In the case of the five pupils it happens that they were the only pupils doing eighth term work in German, and hence the size of section could not be changed. On the other hand, a situation which requires a principal to put sixty-five pupils into a section in third term German must be considered highly unsatisfactory. As far as we know, no well organized experiments have ever been undertaken to determine the number of high school pupils which should constitute a recitation section. In view of the absence of an authoritative standard, we recommend that a theoretically correct standard be adopted, and then tested in practice. We suggest that the tests cover the following points:

- a. The relative progress of pupils is large and in small sections in the same term and the same subject.
- b. The effect on teachers of handling large and small sections, both from the standpoint of the pupils, and the intellectual and physical effect upon the teacher.

In investigating the first topic, care should be taken that the results of the experiment are comparable. For example: The progress of a small section in mathematics should be compared with the progress of a large section in the same term's work of the same subject, and with pupils of the same relative stage of advancement. In the same way, the relative progress of large and small sections in several subjects should be examined.

In investigating the second topic, such questions as these should be answered; to answer them involves the gradual working out of a method of procedure whereby satisfactory answers may be obtained:

- a. Does the teacher find inevitable disadvantages in handling large classes from the standpoint of discipline, attention, ventilation, etc.?
- b. Of how many pupils can a teacher hold the undivided attention for a period of forty-five minutes?

¹ Far Rockaway High School.

² Washington Irving High School.

c. How much more, if at all, do large classes exhaust the teacher's physical and mental resources than the smaller ones?

d. To what extent do large classes interfere with the teacher's growth in scholarship and in skill as a teacher?

(2) Provisional Standard of Thirty Pupils Recommended

After careful consideration, we recommend that thirty pupils be provisionally adopted as the standard size of a recitation section. With that standard, sections could reasonably range from twenty-eight to thirty-three or thirty-five pupils.¹ This provisional standard is in accordance with the practice elsewhere in the country,² and has been arrived at by our staff and the principals of the high schools working independently of each other.

(3) How Far Is the Present Practice From That Standard?

To show the extent to which the size of sections in the high schools fails to approximate the proposed standard of from twenty-eight to thirty-five pupils, the following table has been prepared. Table IX shows the per cent. of the sections in German in all terms which contain less than twenty-eight pupils, from twenty-eight to thirty-five pupils, and over thirty-five pupils:

Table IX

HIGH SCHOOLS	Below 28 Pupils	28-35 Pupils	Over 35 Pupils
DeWitt Clinton.....	25.71	25.71	48.57
H. S. of Commerce.....	26.47	20.59	52.94
Stuyvesant.....	36.96	39.13	23.91
Wallhigh.....	37.50	29.17	33.33
Washington Irving.....	12.50	34.72	52.78
Morris.....	20.37	35.19	44.44
Girls'.....	27.50	42.50	30.00
Boys'.....	50.00	40.00	10.00
Erasmus Hall.....	48.15	40.74	11.11
Manual Training.....	26.56	51.56	21.88
Commercial.....	21.82	45.45	32.73
Eastern District.....	19.15	44.68	36.17
Bushwick.....	20.00	25.00	55.00
Bryant.....	13.33	53.34	33.33
Newtown.....	33.33	33.34	33.33
Flushing.....	71.43	21.43	7.14
Far Rockaway.....	66.66	16.67	16.67
Jamaica.....	33.33	38.89	27.78
Richmond Hill.....	54.54	31.82	13.64
Curtis.....	38.89	55.56	5.55
City.....	29.12	38.11	32.77

¹ These figures are for sections in those terms in which there are pupils enough to make two or more sections. In other terms, the sections must be organized as the situation requires.

² For example, the regulations of the North Central Association of Colleges and Secondary Schools.

This table shows, for the city as a whole, that 29.12 per cent. of the sections in German contain less than twenty-eight pupils; that 38.11 per cent. contain from twenty-eight to thirty-five pupils, and that 32.77 per cent. contain more than thirty-five pupils. This table has not been introduced as a basis for criticizing adversely the present organization of sections in the high schools. The high schools have been organized according to other standards; hence, it is natural that there should be no evident conformity to the standard of twenty-eight to thirty-five pupils set up in this table. The table has been introduced to show that much reorganization is necessary to approximate the standard which we have recommended.

5. Summary of Findings and Recommendations

Our findings concerning the size of sections¹ may be summarized as follows:

1. Large sections are due to
 - (1) The present official standard size—which is too large.
 - (2) The lack of the necessary teachers.
 - (3) In a few cases, a bad distribution of pupils by the principal.
2. Small sections are due to
 - (1) The inevitably small number of pupils in the upper terms of work.
 - (2) In a few cases, a bad distribution of pupils by the principal.

Hence, we recommend:

1. The adoption of a standard size of section of thirty pupils for all terms as a provisional standard to be tested in practice.
2. The employment of enough teachers to make it possible for principals to keep the size of sections reasonably within the limits of the standard—twenty-eight to thirty-five pupils.
3. A careful study by the principals of the subject of program-making, to the end that unnecessary over-size sections may be reduced, and unnecessary under-size sections may be avoided.

¹ For other factors which may affect the size of section, see p. 81.

(II) THE WORK OF CHAIRMEN OF DEPARTMENTS

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(II) THE WORK OF CHAIRMEN OF DEPARTMENTS¹

Classification of Teachers

Teachers in the high schools of New York City are classified by rank, as, first assistants, assistant teachers, and junior teachers. For our purpose classification as (a) first assistants and (b) teachers² will be satisfactory.

(a) First Assistants

According to the by-laws of the Board of Education the term, first assistant, includes the old titles of head teacher, assistant to the principal, and vice-principal. The by-laws³ define the duties of a first assistant as follows: "A first assistant shall, in addition to the work of instruction, assist the principal in matters relating to discipline, supervision, and administration, as may be necessary." Further, the by-laws provide that persons ranking as first assistants shall be assigned to chairmanships of departments as far as possible. The by-laws³ define the duties of a chairman as follows: "A chairman of department shall, in addition to regular work in the classroom, organize and supervise the work of the other teachers of the department under the direction of the principal."

Briefly, the work of the first assistant may be classified as (1) instruction; (2) assistant to the principal in the administration of the school, and (3) administration, including supervision, of the work within a department of study.

(b) Teachers

The principal assigns work to teachers in accordance with their respective licenses. Teachers may be temporarily assigned to classes in subjects other than those for which they hold licenses. The principal is permitted, by the by-laws, to assign to teachers such other duties, in addition to teaching, as he may see fit, subject to the approval of the City Superintendent. The work of a teacher, therefore, may be divided into (1) instruction, and (2) other assigned duties.

¹ We have used the term, "chairmen of departments," instead of the logical one of first assistant, because the former term is more comprehensive. All first assistants are chairmen of departments, but, in the smaller high schools especially, there are chairmen of departments who are not first assistants. Inasmuch as one phase of our discussion is the amount of time given to supervision and direction of the work of other teachers by the chairmen of departments, it is important that the work of all chairmen be considered, whether they are first assistants or not.

² The rank of junior teacher in the high school was not recognized in the "Equal Pay" Bill, passed in 1911.

³ Section 52, Paragraph 10, Page 68, By-Laws of the Board of Education, 1909.

The size of the high schools in New York City makes inevitable a large amount of administrative work which has to be delegated by the principal to first assistants and teachers. The school day in the high school is divided into six recitation periods, except in the technical schools, in which there are seven periods. It is quite generally agreed that each high school teacher, of whatever rank, should have one free period per day for the preparation of his own work as a teacher. As a result, twenty-five periods per week has become the established standard of work for each teacher. This standard seems to us satisfactory. Hence, we suggest that in proportion as a teacher is given administrative work, the number of teaching periods assigned should be correspondingly reduced. On the other hand, if a teacher is assigned the full number of twenty-five teaching periods, he ought not to be made responsible for other work.

Provisions in the By-Laws¹

According to the by-laws of the Board of Education, the principal of a high school of any size is permitted, with the approval of the Board of Superintendents, to organize his school into departments of instruction. In schools with not less than twenty-five teachers, the principal is permitted, with the consent of the Board of Superintendents, to assign to teachers the chairmanships of such departments for a period of one year. If there is a first assistant in the department he must be made such chairman; otherwise, a regular teacher may be chairman.

The following table gives a list of the high schools, the number of students, the number of teachers, and the number of first assistants in each. (Table X is on page 99.)

The following facts concerning Table X should be particularly noted:

1 In the larger high schools (Group I), the number of first assistants ranges from six to nine for a school.

2 (a) There is only one high school² (Far Rockaway) in New York City with less than twenty-five teachers, and, hence, nineteen out of the twenty high schools may have, upon recommendation of the principal and with the consent of the Board of Superintendents, chairmen of departments. Even in Far Rockaway High School, with only thirteen teachers, there is already a first assistant in commercial branches.

(b) The small number of first assistants in the smaller high schools

¹"The principal of each high school may organize, subject to the approval of the Board of Superintendents, departments of instruction in the several groups of subjects of the course of study. In schools having not less than twenty-five teachers, the principal may assign, subject to the approval of the Board of Superintendents, a regular high school teacher to act as chairman of such department for a period not extending beyond the end of the school year in which said assignment is made. Persons holding the rank of first assistants shall be assigned as such chairmen as far as possible."—Section 52, Paragraph 10, Page 68, By-Laws of the Board of Education, 1909.

²Bushwick High School has not yet been completely organized, so that there were no first assistants in the high school on March 31st, 1911.

Table X

HIGH SCHOOLS	NUMBER OF STUDENTS	NUMBER OF TEACHERS	NUMBER OF FIRST ASSISTANTS
GROUP I:			
De Witt Clinton.....	3,173	108	9
High School of Commerce.....	2,006	68	9
Stuyvesant.....	2,148	95	7
Wadleigh.....	2,794	114	7
Washington Irving.....	3,804	137	6
Morris.....	3,365	121	8
Girls'.....	2,969	116	8
Boys'.....	1,834	77	7
Erasmus Hall.....	3,115	126	9
Manual Training.....	3,087	128	9
Commercial.....	2,399	100	8
Eastern District.....	2,766	93	7
GROUP II:			
Bushwick.....	929	32	0
Bryant.....	959	45	2
Newtown.....	776	28	1
Flushing.....	586	28	4
Far Rockaway.....	248	13 $\frac{1}{2}$	1
Jamaica.....	983	41	6
Richmond Hill.....	756	34	2
Curtis.....	838	37	6

These figures were taken from the budget blanks filed by the principals of the high schools on June 12th, 1911. The figures are for March 31st, 1911.

For the purpose of later discussions, the high schools have been divided into two groups, I, those with more than 1,000 pupils, and II, those with less than 1,000 pupils.

(Bryant, Newtown, and Richmond Hill) indicates that the chairmanships of such department in these schools are being assigned to teachers of a rank lower than that of first assistant.

Obviously there will be practically as many departments of instruction in one of these small schools as there are in a larger school, because the same courses of study are offered. In fact, more courses ("general," "commercial," etc.) are usually offered in the smaller high schools than in the larger schools, so that the number of departments would be larger. Obviously, also the number of teachers within a department in the smaller schools is comparatively smaller than in the larger schools.

1. Work as a Teacher (Periods of Teaching)

(1) In the Larger High Schools

According to a statement¹ made by Associate City Superintendent Stevens, principals of the larger high schools are directed to assign to chairmen of departments from twelve to fifteen periods of teaching, thus leaving them from ten to thirteen periods of time in which to organize and supervise the work of their departments and to perform such other duties as the principal may assign to them.

Table XI shows the number of periods per week actually taught by chairmen of the departments of English, Latin, French and German, mathematics, biology, chemistry, physics, and history, in the high schools of New York City with more than 1,000 pupils.

Table XI—95 Chairmen of Departments

Chairmen	Number of Periods of Teaching																													
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
English.....	0	1	0	0	0	0	1	4	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Latin.....	0	0	0	0	0	0	0	2	2	0	0	1	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
French and German.....	0	0	0	0	0	0	0	2	1	0	2	5	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mathematics.....	0	0	1	0	0	0	1	1	1	1	1	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Biology.....	0	0	0	0	0	0	0	2	1	0	0	1	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Chemistry.....	0	0	0	0	0	0	0	2	1	1	1	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physics.....	0	0	0	0	0	0	0	3	0	0	1	0	3	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
History.....	1	0	0	0	0	0	0	2	0	1	3	0	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Total.....	1	1	1	0	0	0	2	18	7	4	9	10	29	3	3	2	3	0	1	0	1	0	1	0	0	0	0	0	0	0

These figures were taken from the "Program of Daily Recitation" sheets furnished the Department of Education by the high school principals in February and March, 1911.

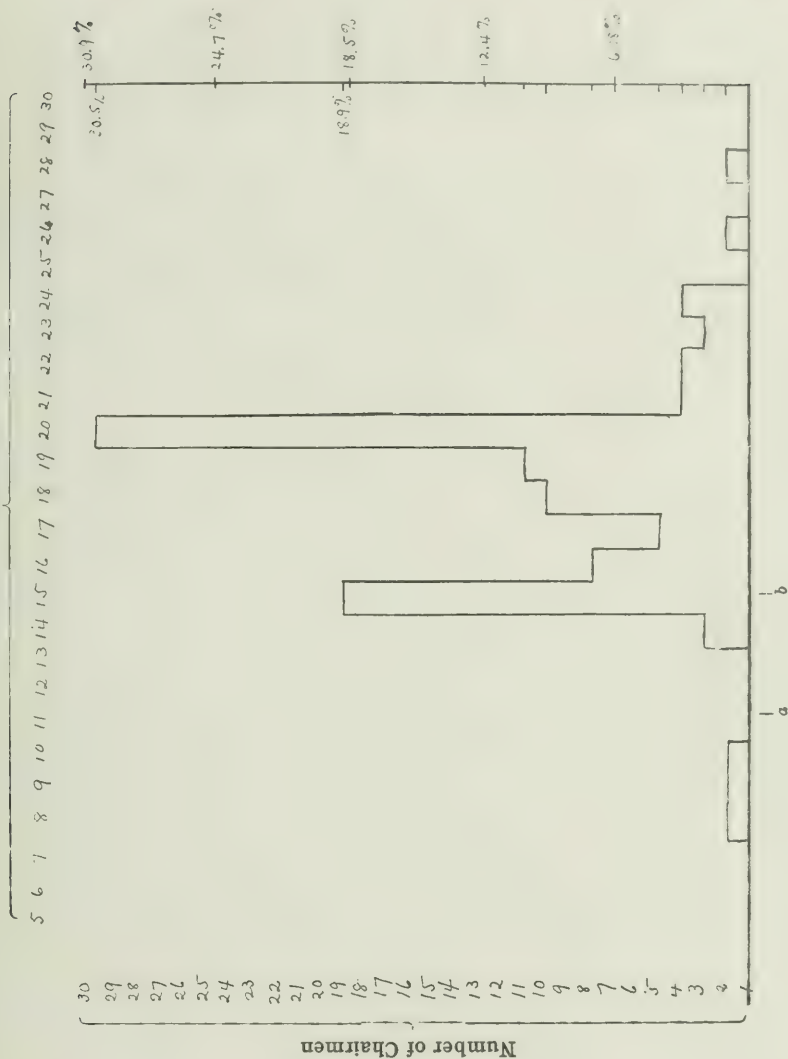
Only five chairmen teach fewer than fifteen periods; the chairman of the English Department in Morris High School teaches nine periods; the chairman of the History Department in Manual Training High School teaches eight periods; the chairman of the Mathematics Department in Commercial High School teaches ten periods, and each devotes the remainder of his time to work in the general office. The chairman of the English Department in the Girls' High School teaches fourteen periods, and the chairman of the Mathematics Department in Erasmus Hall High School teaches fourteen periods. Eighteen chairmen of departments are teaching fifteen periods. It will be seen, therefore, that seventy-two out of ninety-five chairmen of departments in these schools, or 75.7 per cent., are teaching more than the number of periods fixed as the maximum standard for chairmen in these large high schools.

¹ At a conference in his office, November 15, 1911.

Diagram II

95 Chairmen of Departments

Number of Periods of Teaching



Vertical lines, "a" and "b", on the base line, mark the limits of the standard of teaching fixed by Associate City Superintendent Stevens for chairmen in these larger schools.

The diagrams in this section of the report have been prepared with the base line as zero in the scale of numbers at the left in the diagram. Each figure in this scale has been regarded as occupying a unit of space (or a square), and not representing a point. Hence, the line representing a given number in the scale is always at the top of the unit of space (or square), in which the number is found. For example, in the case of eighteen chairmen, teaching fifteen periods, the line representing this fact is drawn at the top of the unit of space opposite the unit of space in the scale in which eighteen is found.

The preceding diagram presents the facts of Table XI in graphic form and emphasizes the following points: (1) That 30.5 per cent. of the chairmen are teaching twenty periods, and (2) that 18.9 per cent. are teaching fifteen periods. (Diagram II is on page 101.)

(2) In the Smaller High Schools

Associate City Superintendent Stevens informed¹ us that principals of the smaller high schools are directed to assign to chairmen of departments from fifteen to eighteen periods of teaching.

Table XII shows the number of periods per week actually taught by chairmen of the departments of English, Latin, French and German, mathematics, biology, chemistry, physics, and history, in the high schools of New York City with less than 1,000 pupils.

Table XII—69 Chairmen of Departments

Chairmen	Number of Periods of Teaching																													
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
English.....	0	0	0	0	0	0	0	1	0	0	1	3	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0		
Latin.....	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0		
French and German.....	0	0	0	0	0	0	0	1	0	0	0	2	1	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0		
Mathematics.....	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	2	0	2	0	1	0	0	0	0	0	0	0	0		
Biology.....	0	0	0	0	0	0	0	1	0	0	0	0	4	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0		
Chemistry.....	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0		
Physics.....	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0		
History.....	0	0	0	0	0	0	0	1	0	0	1	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0		
Total.....	0	0	0	0	0	0	0	7	0	0	2	7	11	1	3	4	2	27	0	4	1	0	0	0	0	0	0	0		

These figures were taken from the "Program of Daily Recitation" sheets furnished the Department of Education by the high school principals in February and March, 1911.

There are no chairmen of departments in these smaller high schools teaching fewer than fifteen periods per week, and some chairmen are teaching as many as twenty-seven and twenty-eight periods. Nine of the sixty-nine chairmen teach eighteen periods or less; in other words, only 13.04 per cent. of the chairmen are teaching according to the above standard of fifteen to eighteen periods. It will be observed, therefore, that sixty out of sixty-nine chairmen, or 86.9 per cent., are teaching more periods per week than the number of periods fixed as the maximum standard for chairmen in these smaller high schools.

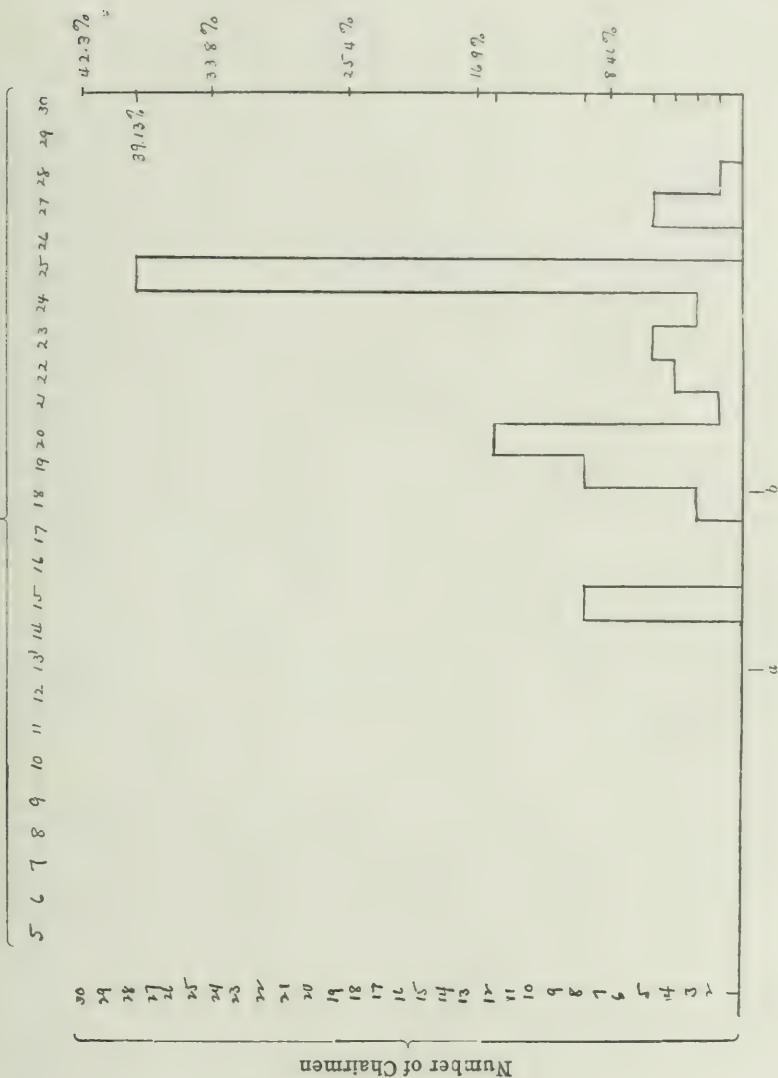
The following diagram presents the facts of Table XII in graphic form and emphasizes the fact that 39.13 per cent. of the sixty-nine chairmen in the smaller high schools are teaching twenty-five periods.

¹ See note, p. 100.

Diagram III

69 Chairmen of Departments

Number of Periods of Teaching



Vertical lines, "a" and "b," on the base line mark the limits of the standard of teaching fixed by Associate City Superintendent Stevens for chairmen of departments in these smaller schools.

(3) Amount of Time Left for "Other Assigned Duties"

(a) In the Larger High Schools

A chairman of a department who teaches fifteen periods obviously has left ten periods of time, which he may utilize in the discharge of such other duties as the principal may assign to him, assuming a standard of twenty-five periods of work per week. Computing the whole number of such periods (from the figures given in Table XI, page 100), we find that ninety-five chairmen of departments in the twelve high schools with over 1,000 pupils have a total of 637 teaching periods of time left every week, or an average per chairman of 6.70 periods. This average of 6.70 periods per week per chairman, then, is the number of periods of time actually left to each chairman of department in which he may supervise the work of his department, and discharge such administrative duties as the principal may assign to him.

It should be recalled at this point that the standard teaching assignment, as fixed by Associate City Superintendent Stevens, contemplates that each chairman in these larger schools should have from ten to thirteen periods per week, or an average of 11.5 periods, in which to discharge other assigned duties. In view of the fact that chairmen are being allowed, in actual practice, only an average of 6.70 periods per week, it is clear that they are being allowed only 58.26 per cent. of the time this standard contemplates.

(b) In the Smaller High Schools

Computing the whole number of periods of time remaining over and above the number of teaching periods assigned (based on Table XII, page 102), we find that sixty-nine chairmen of departments in the eight high schools with fewer than 1,000 pupils have a total of 193 teaching periods of such time left each week, or an average per chairman of 2.79 periods. This average of 2.79 periods per week is the amount of time left each week to each chairman of department in these smaller schools in which to supervise his department and to discharge such other administrative functions as the principal may assign to him.

The standard teaching assignment, as fixed by Associate City Superintendent Stevens, contemplates that each chairman in these smaller high schools shall have from seven to ten periods per week, or an average of 8.5 periods, in which to discharge other assigned duties. These chairmen are receiving, in actual practice, only an average of 2.79 periods per week for such work, or only 32.82 per cent. of the time the standard contemplates.

(4) Teaching and Study Hall Supervision

Of the "other assigned duties" which are given to chairmen of departments, charge of a study hall or class is the only one which can be stated in statistical form. The assignment is always a definite number of recitation periods per week and, hence, the amount of time given to teaching and to study hall supervision by chairmen can be computed. It will be obvious that, as a result of this computation, we can ascertain the amount of remaining time within which chairmen may supervise their departments, and discharge such other administrative duties as may be assigned to them.

(a) In the Larger High Schools

Table XIII shows (a) the average number of periods of teaching per week plus study hall supervision, done by chairmen of departments, and (b) whether additional duties were assigned; in schools of over 1,000 pupils, in the February-June term, 1911. (Table XIII is on page 106.)

The scale of figures at the left in Table XIII represents the average number of periods of teaching and study hall supervision. In column "a," under each one of the subjects, is given the number of chairmen who teach and supervise study hall, the average number of periods per week shown in the scale at the left of the table. Under column "b," "✓" indicates that other duties¹ were assigned and "o" indicates that no other duties were assigned.

The line drawn through the table from left to right passes through the largest number of chairmen teaching and supervising study hall any given average number of periods per week. For example: Four is the largest number of chairmen in English who teach and supervise study hall any average number of periods. This average number of periods of teaching and study hall supervision is eighteen. Hence, eighteen is the most frequent average number of periods of teaching and study hall supervision carried by chairmen of the English Department.

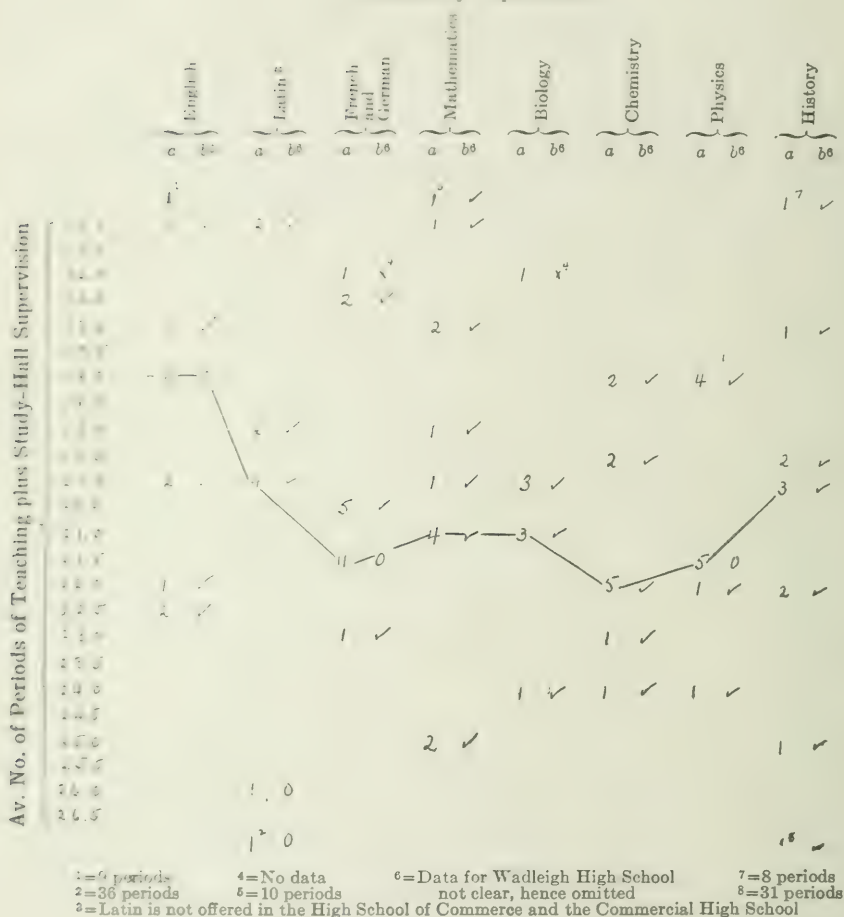
There are, however, three chairmen in this department who teach nine, fifteen, and seventeen periods, respectively, and are assigned administrative duties besides. It should be noted, also, that there are five chairmen in this department who teach an average of twenty to twenty-two and five-tenths periods per week, and carry additional administrative responsibilities.

This line, which is drawn through the average number of periods of greatest frequency in each department, passes from an average of eighteen periods in English, to twenty periods in Latin, to twenty-one and

¹ These are duties other than those connected with the chairmanship of a department.

Table XIII

95 Chairmen of Departments



How Table XIII Was Prepared

Inasmuch as the number of periods of teaching and the number of study periods vary among chairmen, the combined amount of teaching and study hall supervision can be stated only in average numbers. For example: Four chairmen of the English department teach eighteen periods each, but may be assigned a different number of study periods, say, one, two, three, and four periods respectively. The total number of study periods assigned is ten, with an average of 2.5 for each teacher. Eighteen periods of teaching, plus the average of 2.5 study periods, equals 20.5 periods, the average number of periods of definitely assigned teaching and study period work for each of these four teachers.

one-half periods in French and German, to twenty-one periods in mathematics, to twenty-one periods in biology, to twenty-two periods in chemistry, to twenty-one and one-half periods in physics, to twenty periods in history.

It is important to note that, in nearly every case, chairmen of departments are assigned administrative duties, as indicated in column "b," in addition to the teaching assignment, the study hall assignment, and their duties as chairmen of departments.

The following diagram presents the facts of Table XIII in graphic form and emphasizes the following points: (1) That 26.31 per cent. of the ninety-five chairmen in the larger high schools are teaching and supervising study halls twenty-two periods per week, and (2) that 17.89 per cent. are teaching and supervising study halls twenty periods per week. (Diagram IV is on page 108.)

We are now in a position to point out the amount of remaining time which each chairman of department has over and above his teaching and his study hall assignments. Computing the whole number of periods of such remaining time (from the same data from which Table XIII, page 106, was prepared), we find that ninety-five chairmen in the twelve high schools, with over 1,000 pupils, have a total of 443¹ periods of such remaining time each week, or an average per chairman of 4.66 periods. It has already been pointed out that the number of periods of teaching assigned to chairmen of departments would seem to imply that chairmen are allowed sufficient time in which to perform their other duties; but the assignment of so many study periods to chairmen consumes their time to such an extent that they have only an average of 4.66 periods per week over and above their teaching and study hall assignments in which to perform other assigned duties. Although it has been shown that each chairman has an average of 6.70 periods per week over and above his periods of teaching, this amount of time is reduced by an average of a trifle over two periods (2.04) per week of study hall supervision, so that each chairman really has 4.66 periods per week in which to perform other assigned duties.

Referring again to the standard set by Associate City Superintendent Stevens of an average of 11.5 periods per week for these other assigned duties, it will be clear that these chairmen have only 40.5 per cent. of the time this standard contemplates.

(b) In the Smaller High Schools

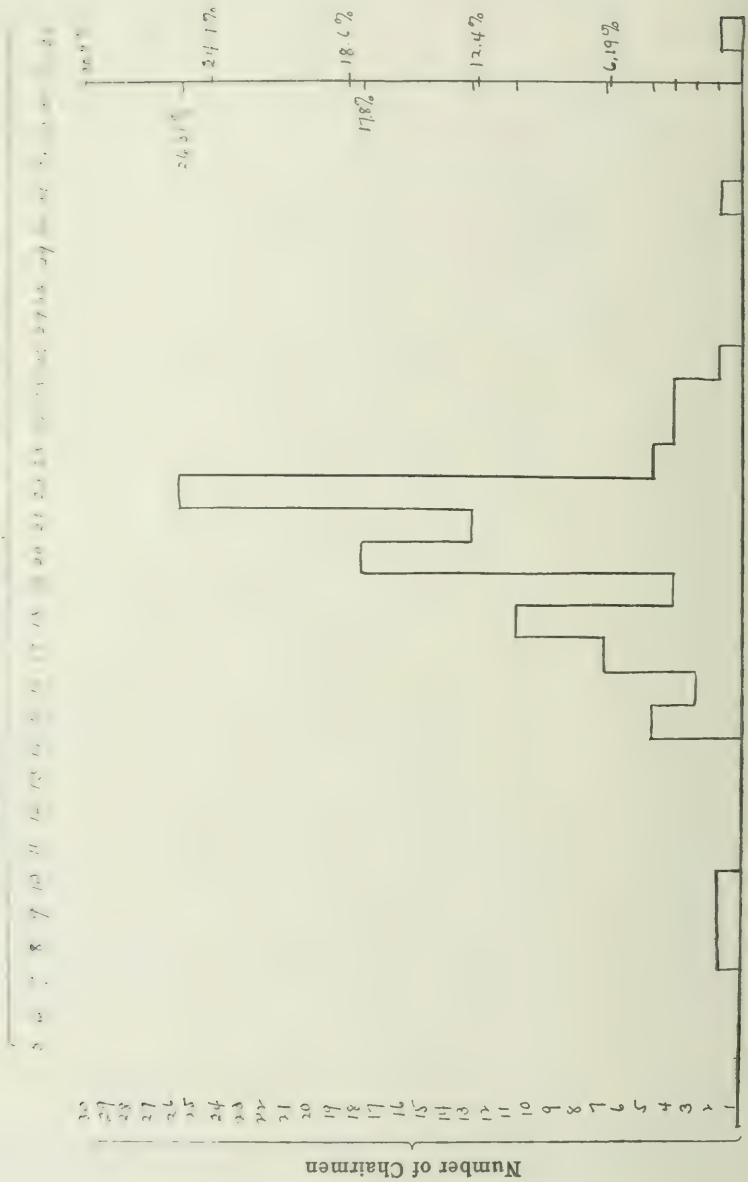
Table XIV shows (a) the average number of periods of teaching per week plus study hall supervision, done by chairmen of departments, and

¹In this computation, all decimals were avoided. Those averages with decimals falling between .1 and .4 inclusive were grouped with the next lowest whole number; those averages falling between .5 and .9 were grouped with the next highest whole number. For example, an average of 16.3 was grouped with the average 16.0 and 16.7 with 17.0.

Diagram IV

9. *Chairmen of Departments*

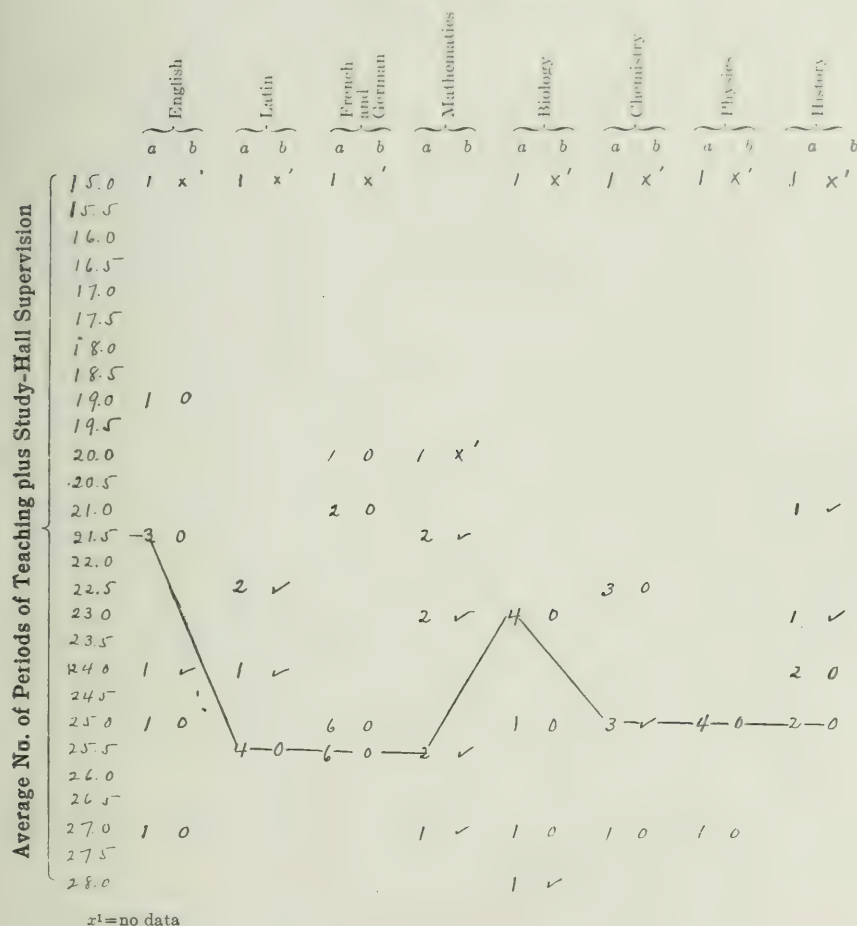
Average Number of Teaching Periods Plus Study-Hall Supervision



(b) whether additional duties were assigned, in schools of less than 1,000 pupils, in the February-June term, 1911.

Table XIV

69 Chairmen of Departments



This table¹ shows, for the smaller high schools, what Table XIII shows for the larger high schools. The line which is drawn through the average number of periods of greatest frequency in each department passes from an average of twenty-one and five-tenths periods in English, to twenty-five and five-tenths periods in Latin, French and German, and mathematics, to twenty-three periods in biology, to twenty-five periods in chemistry, physics, and history.

¹ For an explanation of how this table was prepared see p. 106.

Attention should be called to the fact that the chairmen in these smaller high schools are more generally free from responsibility for administrative duties than are the chairmen in the larger high schools.

Table XIV brings out the fact that the work of eighteen chairmen in teaching and supervision constitutes an average of one period per week more work than regular teachers are expected to carry. Furthermore, thirty-five out of sixty-nine chairmen, or more than 50 per cent., are teaching and supervising study periods as much or more than the standard of twenty-five periods per week for regular teachers, leaving no time whatever for supervision of the work of other teachers in their departments.

The following diagram presents the facts of Table XIV in graphic form and emphasizes the following points: (1) That 24.63 per cent. of the chairmen of departments in the smaller high schools are teaching twenty-five periods; (2) that 17.4 per cent. are teaching twenty-three periods, and (3) that 17.4 per cent. are teaching twenty-six periods. (Diagram V is on page 111.)

Computing the average number of periods of remaining time which a chairman of department has over and above his teaching and study hall assignments, we find that sixty-nine chairmen have a total of 116 such periods, or an average of 1.68 periods per chairman in each high school with less than 1,000 pupils. Even though chairmen of departments in these smaller high schools are assigned teaching so that each chairman has an average of 2.79 periods per week for other duties, the study hall assignments consume so much of that time that each chairman has an average of only 1.68 periods per week in which to supervise his department and to perform such other administrative functions as the principal may assign to him. This amount of time is only 19.76 per cent. of the time contemplated by the established standard.

(5) Summary

We have shown that:

1. Over 75 per cent. of the chairmen in the larger high schools are teaching more periods per week than the maximum standard fixed by Associate City Superintendent Stevens.
2. Over 86 per cent. of the chairmen in the smaller high schools are teaching more periods per week than the standard fixed by Associate City Superintendent Stevens for schools of this size.
3. Teaching assignments to chairmen of departments in the larger high schools take so much of their time that each is left only 58.26 per cent. of the time the standard fixed by Associate City Superintendent Stevens contemplates.
4. Teaching assignments to chairmen of departments in the smaller high schools take so much of their time that each is left only 38.82 per cent. of the time the standard fixed by Associate City Superintendent Stevens contemplates.

Diagram V

69 Chairmen of Departments

Average Number of Periods of Teaching plus Study-Hall Supervision

5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

30

29

28

27

26

25

24

23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

Number of Chairmen

32.12%
25.70%
19.27%
12.85%
6.43%

24.63%

17.39%

12.85%

6.43%

5. Teaching and study hall supervision done by chairmen in the larger high schools consume so much time that chairmen have only 40.5 per cent. of the time for supervision and administrative work that the standard fixed by Associate City Superintendent Stevens contemplates.

6. Teaching and study hall supervision done by chairmen in the smaller high schools consume so much time that chairmen have only 19.76 per cent. of the time for supervision and administrative work that the standard fixed by Associate City Superintendent Stevens contemplates.

(6) Standard Teaching Assignments for Chairmen of Departments

Thus far we have measured the practice in the various high schools of New York City by the standards generally agreed upon by the school authorities, or those definitely fixed by Associate City Superintendent Stevens. Are these standards satisfactory?

1. The first standard which we have used is one quite generally agreed upon throughout the country, and in the city, but one which is not definitely incorporated in the by-laws or regulations of the Board of Education, or of the Board of Superintendents, viz., that twenty-five periods of teaching should constitute a week's work.

2. The second standard is one fixed by Associate City Superintendent Stevens, and provides that the chairmen of departments in the larger high schools should teach from twelve to fifteen periods, and should devote the remainder of their time to supervision of departments and such other administrative work as the principal may assign to them.

3. The third standard is also fixed by Associate City Superintendent Stevens, and provides that the chairmen in the smaller high schools should teach from fifteen to eighteen periods per week, and should devote the remainder of their time to other assigned duties, as in the case of chairmen in the larger schools.

There are no well established standards in the above cases. After visiting the schools, after many conferences with principals, first assistants and teachers; in view of the practice in other cities, and in view of the responsibility devolving upon the chairmen of departments in the high schools of New York City, we conclude that these standards are just, and should, therefore, be approximately maintained in practice.

2. Work as Assistant to Principal

Before the consolidation of the school system under the charter establishing Greater New York, there were various administrative officers in the different high schools, known as head teacher, vice-principal, and assistant to the principal. These special titles were not recognized in the educational section of the new charter, but, by definition by the Board

of Education, they have been included under the title of first assistant.¹ Thus first assistants in the high schools have become assistant administrative officers.

(1) Scope and Character

The following topics² indicate the scope and character of the work of a first assistant³ as an assistant to the principal in the administration of the school:

1. Consulting with the principal in regard to the course of study and the educational policy of the school and general school problems.
2. Handling discipline in the school.
3. Reporting to the principal on the success of class and examination work.
4. Rating of teachers for the information of the principal.
5. Supervision of the fire drill.
6. Supervision of college entrance requirements and examinations.
7. Supervision of school activities—school paper, athletics, literary and other societies, exhibitions, parents' meetings.

In addition to these executive, supervisory, and administrative duties assigned to first assistants by the principal, other responsibilities are carried by them. Nearly every chairman of a department is in charge of an official class;⁴ this means that he records the daily attendance, noting admissions and discharges, reports absences to the principal, sends notices to the parents of pupils who are absent, and, in general, has charge of the class. They also keep all permanent records of the progress of the pupils in the official class during each term. In most of the high schools, as has already been shown, they are also assigned the supervision of study halls, on an average of 2.04 periods per week in the larger high schools and 1.11 periods in the smaller schools. In addition, first assistants are usually placed in charge of different floors or halls throughout the school during the intermission between classes, before and after school, and during the noon period.

¹ The functions of the first assistants as chairmen of departments will be considered later. See p. 114.

² These topics and the topics concerning work of chairmen on p. 115 were furnished by a Committee of The Male First Assistants' Association.

³ The term, first assistant, is used here instead of the term, chairman of department, because it is as "first assistant" that the chairman of department acts as an assistant administrative officer rather than because he is chairman of department.

⁴ For a more extended account of the work of a teacher in charge of an official class, see p. 137.

3. Work as Chairman of Department

(1) Responsibilities of the Chairman of a Department

As has already been stated, the chairman of a department is responsible for organizing and supervising the work of teachers in his department. Inasmuch as he has to determine the efficiency of the teachers, he also has general supervision of the progress of the pupils. Table XV shows the number of pupils and the number of teachers (exclusive of chairmen) in the departments of English, biology, Latin, and mathematics, in the twenty high schools of New York City.

Table XV

High Schools	English		Biology		Latin		Mathematics	
DeWitt Clinton.....	2946	18	1426	9 $\frac{5}{8}$	1110	7 $\frac{5}{8}$	2549	16 $\frac{1}{2}$
H. S. of Commerce.....	1933	9	1031	4	....	....	1771	7
Stuyvesant.....	2229	11 $\frac{1}{2}$	....	....	531	4	2088	12
Wadleigh.....	2779	17 $\frac{1}{4}$	1177	10	1666 ¹	14	2300	16
Washington Irving.....	3804	25	760	3	235 ²	2	1361	8
Morris.....	3225	20	1115	6 $\frac{5}{8}$	1710	10 $\frac{3}{8}$	2619	14
Girls'.....	2969	16	1230	9	1717	13	2550	16
Boys'.....	1834	13	795	5	1741	11	1827	11
Erasmus Hall.....	3015	22 $\frac{1}{2}$	1172	11	2804 ¹	22	2478	15 $\frac{1}{4}$
Manual Training.....	2840	17 $\frac{1}{2}$	1437	7	1370	11	2790	18
Commercial.....	2399	15	781	4	....	....	2399	7
Eastern District.....	2766	12 $\frac{1}{2}$	665	3 $\frac{1}{2}$	1247	6 $\frac{5}{8}$	1713	9
Bushwick.....	929	5	816	3	265	3	929	3
Bryant.....	945	6 $\frac{5}{8}$	340	1	238	1 $\frac{1}{2}$	736	2
Newtown.....	776	3 $\frac{1}{2}$	205	1 ³	235	1	453	1 $\frac{1}{2}$
Flushing.....	580	3	210	1 $\frac{1}{2}$	289	2	402	2
Far Rockaway.....	248	1 $\frac{3}{8}$	69	1 $\frac{1}{2}$	100	1 $\frac{1}{2}$	144	1 ³
Jamaica.....	920	5	222	1	393	2 $\frac{1}{2}$	485	3
Richmond Hill.....	751	5	191	1	273	2	369	2
Curtis.....	878	4	331	1 $\frac{5}{8}$	364	2 $\frac{5}{8}$	771	4 $\frac{1}{2}$

¹ Including Greek.

² See Chairman.

³ One, and less than two, whole teachers in the department.

These figures were taken from the budget blanks filed by the principals of the high schools on June 12th, 1911. The figures are for March 31st, 1911.

This table shows the responsibility carried by chairmen of departments in the high schools of New York City. For example: In the Girls' High School, in the English department, there are 2,969 pupils and sixteen teachers; in biology, there are 1,230 pupils and nine teachers; in Latin, there are 1,717 pupils and thirteen teachers; in mathematics, there are 2,550 pupils and sixteen teachers. These figures show that the chairman of one of these departments carries as large a responsibility as the principal of most high schools throughout the country; and it should be added that few principals are called upon to do any teaching.

The chairman of a department in the main building of a school

which has annexes is also responsible for the work of his department in the annexes. In many cases, however, the annex is so far from the main building that several hours are necessary to make the trip and visit any classes. It can be readily seen, therefore, that a head of department needs a large amount of time to discharge properly this responsibility. As far as we have been able to ascertain, there is not much supervision of the work in the annexes by heads of departments in the main building. This is one of the inevitable results of the system of "annexes" which exists in New York City.

The following topics indicate the scope and character of the work of a chairman of department:

1. Supervision of class teaching.
2. Maintenance of an *esprit de corps* in the department.
3. Outlining of class work and ground to be covered.
4. Setting of examination papers for examinations within the school and supervision of correction. Re-reading the doubtful papers. Supervision of "condition" examinations.
5. Conducting regents' examinations—program, care of record, correspondence, recording marks, re-reading doubtful papers.
6. Consulting with students in regard to program.
7. Directing and presiding at departmental meetings once a month.
8. Making arrangements for classes during the absence of teachers.
9. Making requisitions for apparatus, text books, and supplies.
10. Supervision of the distribution, collection, and care of text books.
11. Supervision of the yearly inventory of books, apparatus, and supplies.

We agree with the chairmen of departments in saying that the most important function of those enumerated above is the supervision of class teaching and the general direction of the work of the department. In order that chairmen of departments may have the time in which to supervise and direct the work of the department (and to perform other assigned administrative work), they are relieved of teaching.¹ However, they state that altogether too little supervision of class room instruction is being done, owing to the fact that their time is taken up with so many general administrative duties.² Failure to perform these administrative duties assigned by the principal is apparent at once, and, hence, it is but natural that first assistants should give the administrative duties first consideration rather than slight them to supervise the work of teachers. The supervision can be neglected without evil effects becoming apparent at once, or even for a considerable time. The teachers naturally make no complaint if they are not supervised and criticized, and the result is that supervision, rather than especially assigned administrative duties, is neglected.

¹ For amount, see p. 100 and the discussion following.

² For a list of these administrative duties, see p. 113 and the discussion following.

(2) Bad Results from Lack of Supervision

It is agreed among chairmen of departments that there is need of much more supervision than they are able to carry on under present conditions. Some of the most serious results of the lack of adequate supervision are the following:

1. "Snap judgments" have to be made by first assistants because they are required to judge the efficiency of instruction given by teachers without adequate time for securing information upon which to base a judgment.

2. Lack of coherence in the work of a department as to policy and methods of instruction. Young teachers need to be trained in order to cooperate properly with the other teachers in the department. A chairman of a history department stated that there had been an entire change of the five teachers in his department within the last five years.

3. Substitutes temporarily employed cannot be given necessary help to insure the satisfactory progress of their pupils.

4. Lack of supervision promotes dilatory methods on the part of teachers; the mere expectation of supervision keeps teachers up to the mark.

5. Inadequate supervision makes it impossible for the chairman to disseminate good teaching throughout the department.

6. Uniformity in grading and promoting pupils by the teachers of the department cannot be secured unless proper supervision exists.

It should be further noted that a large amount of clerical work devolves upon the chairmen of departments, all of which they must do or, as some do, personally pay for having it done. This clerical work is not the same in all schools, but the following list indicates the reports and other clerical work which are required of first assistants in one or more of the high schools of the city: Monthly report, annual report, regents' report, special reports to the City Superintendent, Associate City Superintendent, District Superintendent, and others, training school certificates, certificates of completion of the course for the candidates for graduation who fail to secure diplomas, payrolls and checks, list of pupils in new grades at the end of the term, preparing copies of questions for examinations.

Many of these duties are performed wholly or in part by assistant teachers also. The objectionable feature is the same, whether performed by a first assistant or a teacher. This work might be performed as well by less highly paid employees, and the time of teachers devoted to teaching or supervision.

The undesirable results of the present arrangement for clerical work may appear in either, or both, of the following ways:

1. Time may be formally assigned to such teachers as perform these services, and credited on the school program. For example: On the present program of the Flushing High School, twenty periods are formally assigned for such work which, with other duties of the same nature, takes the full time of one teacher. In other words, the school might be conducted with one less assistant teacher, salary \$2,500, if there were a clerical assistant, salary \$1,250. Further, the work performed by such a clerical assistant would be much more efficient, since the clerical assistant would render continuous service for seven hours a day, while the time of teachers consists of scattering periods of forty-five minutes at a time, with a total of about four hours a day, as the equivalent of one teacher's time.

2. If time is not formally allowed on the school program for any of these duties, but they are, nevertheless, performed by teachers, the result is necessarily a lessened efficiency in the performance of professional duties. In other words, the time taken for these general duties lessens the amount of time which each teacher needs to maintain his class work at the maximum efficiency.

If all of the duties that could as well be performed by a clerical assistant were so assigned, either more periods of teaching could be assigned to teachers than at present without lowering the present efficiency of instruction, or the present standards of efficiency in teaching could be raised; in either case, the expense to the city would be decreased.

(3) Amount of Time Needed for Supervision

In view of the testimony of chairmen of departments in the New York City high schools, and the general practice in other cities, we conclude that a chairman of a department should spend at least two periods per month in the class room of each teacher. At least so much is needed to gather the information necessary to enable him to make constructive criticisms of the teaching, and to supervise the progress of pupils. This is the present practice in some of the high schools of the city. It seems to be a satisfactory minimum, because—

1. One who supervises, for purposes of constructive criticism of and helpfulness to the teacher, should spend the whole of a recitation period in the class room, in order that he may see the lesson as a whole.

2. One's judgment of a teacher's ability should not be based upon what may have been seen in a single recitation, whether what he saw was favorable to the teacher or otherwise.

3. The chairman of a department should make at least two visits per month to each class for the purpose of observing the progress of pupils.

4. Most of the high schools of New York City are so large that it is practically impossible for the principal to visit each teacher enough to enable him to make the constructive criticisms which should grow out of

supervision. Twelve of the twenty high schools of New York City have sixty or more teachers. In a school of sixty teachers, it would take the principal twelve weeks to visit each teacher once, if he systematically visited one period each day during that time. Demands upon the principal's time in these large schools are so great that he is prevented from doing much systematic visiting of classes. Therefore, it becomes exceedingly important that heads of departments have sufficient time for this supervision, and, further, the time for doing it effectively.

To allow each chairman two periods per month for each teacher in his department would not reduce the amount of teaching which chairmen of departments are now doing. On the contrary, the total amount of teaching done by chairmen of the department of English, for example, under the proposed plan, would exceed the number of periods of teaching now done by these same chairmen by exactly one period each. But, as will be pointed out later, it will be necessary to reduce the amount of clerical and administrative work, which chairmen of departments are now doing, in order to give them the amount of time necessary for proper supervision. As will also be pointed out later, this work should be performed by clerks and teachers, who draw much lower salaries than chairmen of departments.

Table XVI shows (a) the number of periods of teaching done by the chairmen of the department of English in each of the high schools of New York City; (b) the number of teachers in the department, exclusive of chairmen, and (c) approximately the number of periods of teaching which each chairman would do under the proposed plan. (Table XVI is on page 119.)

This plan has the distinct advantage of fixing much more definitely than is now fixed a reasonable amount of time for supervisory purposes. Further, it fixes this amount of time for supervision in accordance with the number of teachers in the department to be supervised.

From the above table it will be readily seen that it is not the amount of teaching which chairmen are now doing that interferes with the supervision of their departments, because, as has been shown, they are relieved from enough teaching at present to supervise in a satisfactory manner. What does interfere with their supervision and teaching are their assignments of study hall supervision; the amount of clerical work connected with the running of their departments, and, most seriously of all, the necessity on their part of assuming obligations for some of the general administrative work of the school as a whole. The importance of all of this work cannot be minimized; some of it requires high grade executive ability. A large part of it, however, could be performed by teachers who draw less salary, and a considerable part of it could be performed by a moderate salaried clerk. It is from a large part of this work that the chairmen of departments should be relieved in order that their energy may be spent in the higher grade of service of supervision and direction of class teaching, and the performance of the more important administrative duties connected with the general administration of the school.

Table XVI

HIGH SCHOOLS	a	b	×	c
DeWitt Clinton.....	15	18	(20)	15
H. S. of Commerce.....	16	9	(10)	20
Stuyvesant.....	18	11 $\frac{1}{2}$	(12)	19
Wadleigh.....	15	17 $\frac{1}{4}$	(20)	15
Washington Irving.....	15	25	(25)	12
Morris.....	9 ¹	20	(20)	15
Girls'.....	14	16	(16)	17
Boys'.....	19	13	(14)	18
Erasmus Hall.....	15	22 $\frac{1}{2}$	(25)	12
Manual Training.....	19	17 $\frac{1}{2}$	(20)	15
Commercial.....	17	15	(15)	17
Eastern District.....	20	12 $\frac{1}{2}$	(14)	18
Bushwick.....	24	5	(6)	22
Bryant.....	19	6 $\frac{5}{8}$	(8)	21
Newtown.....	22	3 $\frac{1}{2}$	(4)	23
Flushing.....	19	3	(4)	23
Far Rockaway.....	25	1 $\frac{3}{5}$	(2)	24
Jamaica.....	15	5	(6)	22
Richmond Hill.....	19	5	(6)	22
Curtis.....	18	4	(4)	23
Totals.....	353	..	..	373

¹ The chairman of the English Department has charge of the general office work of the school.

Method of Preparing Table XVI

Column "c" contains figures which show approximately the amount of teaching which the chairman of the department of English in each of the high schools would do under the proposed plan. These figures are only approximate because of the nature of the computation. For example: In DeWitt Clinton High School, the chairman of a department of eighteen teachers would be allowed thirty-six periods per month for supervision. There are twenty teaching days in each month. Hence, each day the chairman would have 1.8 periods, if the computation is made exact. It will be clear that, under these circumstances, one-fifth of a period, or nine minutes, could not be as profitably spent at anything else as it could be in supervision.

Therefore, the figure in column "c" is the one based upon such a number of teachers in the department as will make unnecessary the division of a period between supervision and other work. This figure for DeWitt Clinton High School is twenty. The figures in column "x", on which these approximations were based, were included to show, first, the basis of the computation for the figures in column "c", and, second, that the computation was always for a number of teachers equal to or greater than the number now employed as indicated in column "b".

4. Recommendations

In view of the foregoing, the following recommendations are made:

1. The chairmen of a department should, as in the case of other teachers, be allowed one free period each day.
2. The chairman of a department should be allowed two periods

each month for the class room visits and supervision of each teacher in his department.

3. If the chairman of a department is assigned administrative duties (as first assistant), his number of teaching periods should be correspondingly reduced, in order that he may still have the required amount of time for the satisfactory supervision of his department.

4. The chairman of a department should be relieved, as far as possible, from all purely clerical work, which work should be performed by additional clerks.

5. First assistants should be relieved, as far as possible, from supervising study halls, and, except occasionally, also from an official class, in order that their time may be devoted to a higher grade of professional work.

(III) THE WORK OF OTHER TEACHERS

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(III) THE WORK OF OTHER TEACHERS¹

The work of a teacher may be twofold—(a) periods of teaching, and (b) other assigned duties.

In the time at our disposal it has been necessary to limit our study of the amount of teaching and other work done by teachers to the departments of English, German, mathematics, biology, and history. Our purpose has been, on the one hand, to limit the scope of the study sufficiently to cover only essential details, and, on the other hand, to make it sufficiently comprehensive to cover typical work done by the teachers in the high schools throughout the system. The departments named have been selected because (a) they are found in nearly all of the high schools; (b) they are representative of the different departments of study in the high school; (c) they cover subjects which are required only in the first year, and subjects which are offered only beyond the first year.

I. Periods of Teaching

(1) Teachers of English, German, Mathematics, Biology, and History

Table XVII shows the number of periods taught by teachers (exclusive of chairmen) of English, German, mathematics, biology, and history in all the high schools. (Table XVII is on page 124.)

This table shows great variation in the number of periods of teaching done by teachers in the departments named:

In English, the number of teaching periods per teacher ranges in the several groups from a minimum of six to a maximum of thirty-four periods. The number of periods most frequently taught by any group of English teachers is twenty.

In German, the number of teaching periods per teacher ranges in the several groups from a minimum of eighteen to a maximum of twenty-eight periods. The number of periods most frequently taught by any group of German teachers is twenty-five.

In mathematics, the number of teaching periods per teacher ranges in the several groups from a minimum of four to a maximum of twenty-eight periods. The number of periods most frequently taught by any group of mathematics teachers is twenty-five.

¹The word "teachers" is used in this section of the report to include all teachers below the rank of chairmen of department, whether that chairman was a first assistant or not. In a few cases, in the smaller high schools, where there was only one teacher in a department, the number of periods of teaching of that teacher have been included.

Table XVII

671 TEACHERS

MAIN BUILDINGS AND ANNEXES

NUMBER OF PERIODS OF TEACHING																														
Teachers	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1		
English	0	0	1	0	0	0	0	1	2	0	0	0	10	6	13	25	52	43	28	11	8	22	2	0	1	1	0			
German	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	30	1	1	7	14	57	0	0	2	0	0			
Mathematics	1	0	0	0	0	0	0	0	0	0	0	2	1	0	1	7	24	19	11	22	33	45	4	3	1	0	0			
Biology	0	0	0	0	0	0	0	0	0	0	0	4	3	0	3	4	32	1	3	6	0	19	0	1	1	0	0			
History	0	0	0	1	0	0	0	0	0	0	0	0	3	3	5	2	13	30	9	3	5	2	0	0	0	0	0			
Total..	1	0	1	1	0	0	0	1	2	0	0	6	17	9	24	42	151	94	52	49	60	145	6	4	5	1	0			

One teacher teaching 34 periods omitted.

These figures were taken from the "Program of Daily Recitation" sheets furnished the Department of Education by the high school principals for the February-June term, 1911.

The "Program of Daily Recitation" sheets of the Annexes of the Girls' High School were not sufficiently clear to be accurately interpreted, hence the data were not included in this table, or in subsequent tables on the work of teachers.

In biology, the number of teaching periods per teacher ranges in the several groups from a minimum of fifteen to a maximum of twenty-eight periods. The number of periods most frequently taught by any group of biology teachers is twenty.

In history, the number of teaching periods per teacher ranges in the several groups from a minimum of seven to a maximum of twenty-five periods. The number of periods most frequently taught by any group of history teachers is twenty-one.

It will be seen that the number of periods most frequently taught by any group of teachers in each department is as follows:

Teachers of English	20 periods
" " German	25 "
" " Mathematics	25 "
" " Biology	20 "
" " History	21 "

Twenty periods of teaching per week is the number of periods most frequently taught by any of the 671 teachers in these departments—151 teachers are teaching that number. It should be noted, however, that almost as many, or 145 teachers, are teaching twenty-five periods per week.

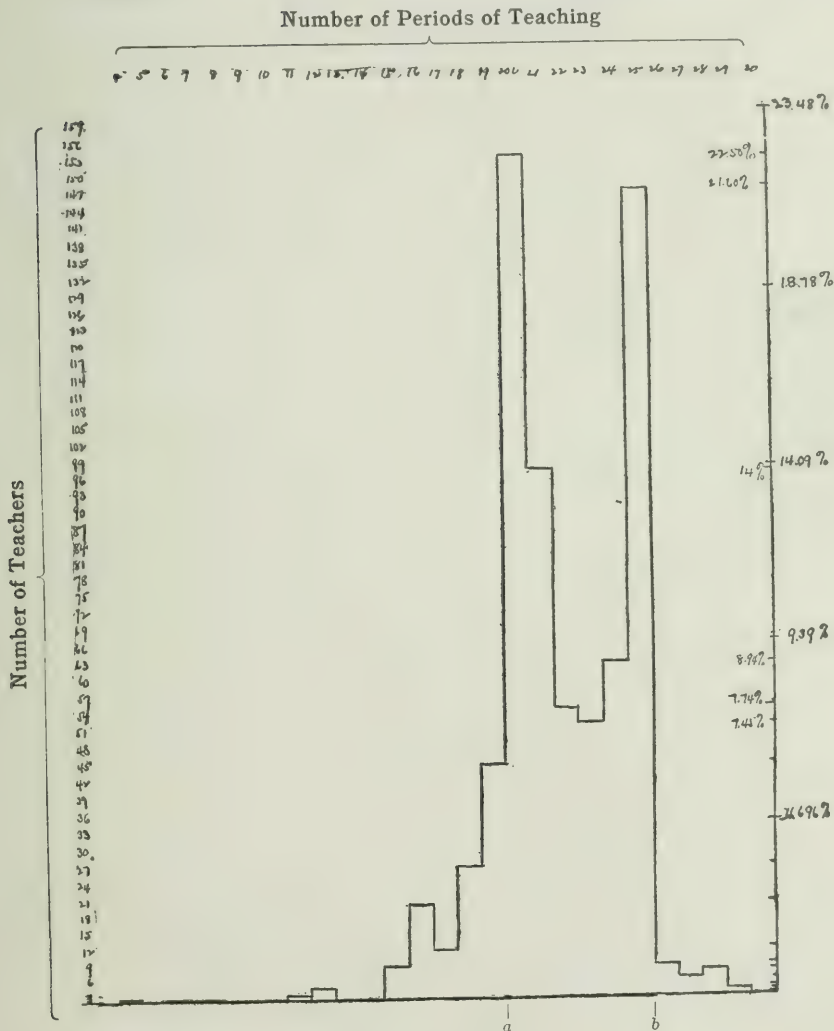
The following diagram shows the facts in Table XVII in graphic form and emphasizes the following points concerning the 671 teachers:

15.50%	are teaching less than 20 periods
22.50%	" " " " 20 "
14.01%	" " " " 21 "
7.75%	" " " " 22 "
7.30%	" " " " 23 "
8.94%	" " " " 24 "
21.61%	" " " " 25 "
2.39%	" " more " 25 "
100.00%	

Diagram VI

671 Teachers

Main Buildings and Annexes



Vertical lines "a" and "b" on the base line mark the limits of the standard of teaching fixed by Associate City Superintendent Stevens.

This diagram pictures clearly what Table XVII shows, namely, that 82.11 per cent. of the teachers under consideration are teaching from twenty to twenty-five periods; that 15.50 per cent. are teaching less than twenty periods, and that 2.39 per cent. are teaching more than twenty-five periods.

It would be wrong to conclude that teachers are doing too little teaching, even though the figures in Table XVII do show that 15.50 per cent. of the 671 teachers are teaching less than twenty periods. Some teachers are doing work in the general office, or are responsible for other administrative work; and this work they cannot do unless their number of periods of teaching is correspondingly reduced. Further, teachers are usually assigned study hall supervision and other additional duties (these additional duties will be discussed later; see page 135 and ff.); hence, this work must be considered, together with the teaching, before any valid conclusion can be reached concerning the amount of work which teachers are doing.

(2) Teachers of English Separately

Associate City Superintendent Stevens directs¹ that teachers of English be assigned twenty or twenty-one periods of teaching per week, and all other teachers from twenty to twenty-five periods. It is necessary, therefore, to differentiate between teachers of English and teachers in other departments in order to measure the practice in schools by these standards.

Table XVIII shows the number of periods taught by 226 teachers in the departments of English in all the high schools.

Table XVIII

226 TEACHERS OF ENGLISH

MAIN BUILDINGS AND ANNEXES

NUMBER OF PERIODS OF TEACHING																														
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Number of Teachers...	0	0	1	0	0	0	0	1	2	0	0	0	10	6	13	25	52	43	28	11	8	22	2	0	1	1	0			

This table shows that of the 226 teachers of English, fifty-eight, or 25.6 per cent., are teaching less than twenty periods; that seventy-three, or 32.3 per cent. are teaching more than twenty-one periods, and ninety-five, or 42 per cent., are teaching twenty or twenty-one periods—the standard fixed by Associate City Superintendent Stevens. The most frequent number of periods taught by any group of teachers of English is twenty; about four-fifths as many teachers are teaching twenty-one periods.

¹ See note, p. 100.

Since only 42 per cent. of the teachers are teaching according to the established standard, it is natural to ask: Why does not the practice in the schools conform more closely to that standard? It is clear that, if the instruction in English entails so much more labor than instruction in other subjects as to require a lower maximum standard by four periods of teaching than the standard for other teachers, the schools ought not to require 32 per cent. of the teachers of English to teach more than that maximum standard. If twenty-one periods are considered by the Department of Education as a maximum standard, in the same sense that twenty-five periods are considered a maximum standard for other teachers, the Department should provide enough teachers of English to make it possible to maintain approximately that standard.

On the other hand, why are 25.66 per cent. of the 226 teachers of English teaching fewer than twenty periods? It is the practice to assign relatively more periods of study hall supervision to teachers of English to give them the opportunity during that time to correct some of the many papers which fall to the lot of such teachers. This statement will receive further discussion later.

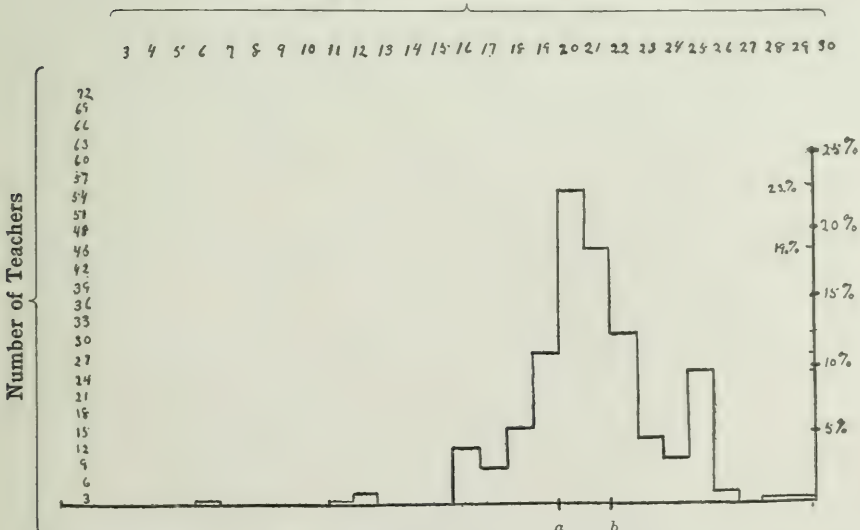
The following diagram shows the facts of Table XVIII in graphic form and emphasizes the point that only 42 per cent. of the teachers of English are teaching according to the standard fixed by Associate City Superintendent Stevens.

Diagram VII

226 Teachers

Main Buildings and Annexes

Number of Periods of Teaching in English



Vertical lines, "a" and "b," on the base line, mark the limits of the standard of teaching fixed by Associate City Superintendent Stevens.

(3) Teachers of German, Mathematics, Biology and History

Table XIX shows the number of periods taught by 445 teachers in the Departments of German, Mathematics, Biology, and History in all the high schools.

Table XIX

445 TEACHERS OF GERMAN, MATHEMATICS, BIOLOGY AND HISTORY

MAIN BUILDINGS AND ANNEXES

Teachers	NUMBER OF PERIODS OF TEACHING																													
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
German.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	30	1	1	7	14	57	0	0	2	0	0			
Mathe- matics.....	1	0	0	0	0	0	0	0	0	0	0	2	1	0	1	7	24	19	11	22	33	45	4	3	1	0	0			
Biology.....	0	0	0	0	0	0	0	0	0	0	0	4	3	0	3	4	32	1	3	6	0	19	0	1	1	0	0			
History.....	0	0	0	1	0	0	0	0	0	0	0	0	3	3	5	2	13	30	9	3	5	2	0	0	0	0	0			
Total.....	1	0	0	1	0	0	0	0	0	0	0	6	7	3	11	17	99	51	24	38	52	123	4	4	4	0	0			

Of these 445 teachers, forty-six teachers, or 10.3 per cent., are teaching less than twenty periods, the minimum standard fixed by Associate City Superintendent Stevens; twelve teachers, or 2.7 per cent. of the total number, are teaching more than twenty-five periods, the maximum standard established by Associate City Superintendent Stevens; 387 teachers, or 86.95 per cent. of the total number, are teaching from twenty to twenty-five periods. In other words, practically 87 per cent. of the teachers are assigned teaching in accordance with the established standard. The most frequent number of periods taught by any one group of teachers is twenty-five periods, with about three-fourths as many teachers teaching twenty periods.

The following diagram shows the facts of Table XIX in graphic form and emphasizes the facts that 27.6 per cent. of the 445 teachers are teaching twenty-five periods, and 22.2 per cent. are teaching twenty periods. (Diagram VIII is on page 129.)

(4) Teaching and Study Hall Supervision

a. Teachers of English, German, Mathematics, Biology, and History

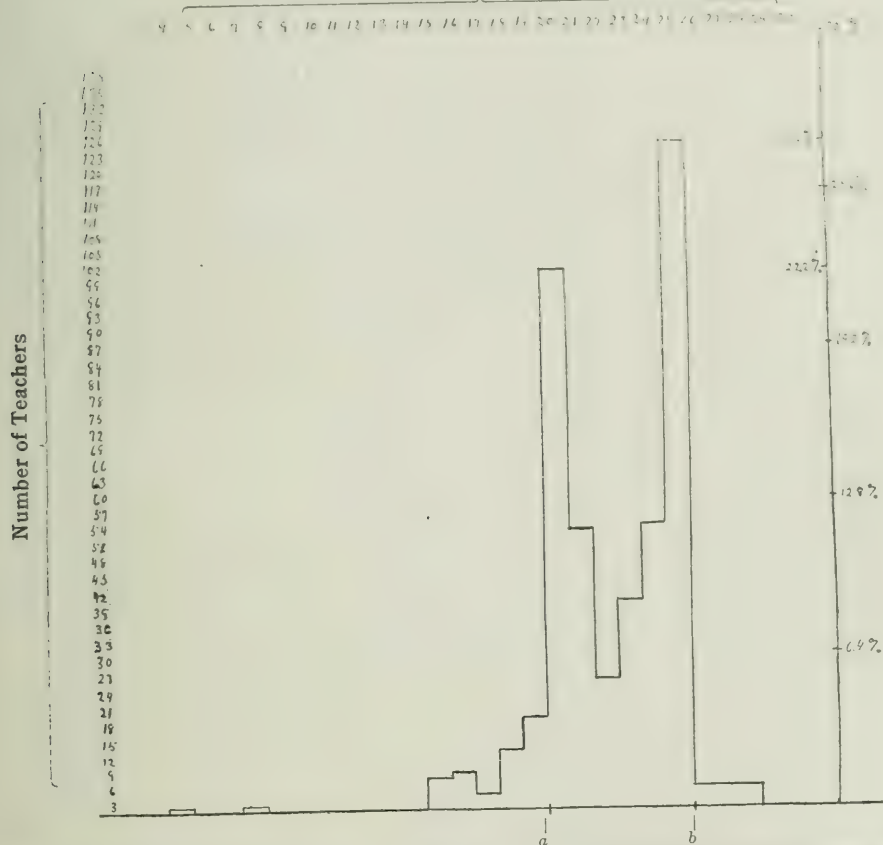
Of the other assigned duties, study hall supervision is the only one which can be stated in terms of teaching periods. Inasmuch as it occupies regularly a considerable portion of the teachers' time, it should be considered.

Diagram VIII

445 Teachers

Main Buildings and Annexes

No. of Periods of Teaching in German, Mathematics, Biology and History



Vertical lines, "a" and "b", on the base line, mark the limits of the standard of teaching fixed by Associate City Superintendent Stevens.

Table XX shows the average number of periods of teaching and study hall supervision done by 671 teachers in the Departments of English, German, Mathematics, Biology, and History in the high schools of New York City. (Table XX is on page 130.)

The line drawn through this table, from left to right, passes through the largest number of teachers in each department who teach and supervise study hall any given average number of periods. This line passes from an average of twenty-four periods of teaching and study hall supervision in English, to twenty-five and one-half periods in German, to

Table XX¹

671 Teachers

Main Buildings and Annexes

[illegible]

¹ For an explanation of the method according to which this table was prepared, see footnote accompanying Table XIII, p. 106.

twenty-five and one-half periods in mathematics, to twenty-five periods in biology, to twenty-four and one-half periods in history. It should be noted that nearly all of the teachers of English teach and supervise study hall from an average of twenty-two and one-half to twenty-seven periods per week, while the average amount of teaching and study hall supervision done by teachers in the Departments of German, Mathematics, Biology, and History, is equal to, or higher than, that in English.

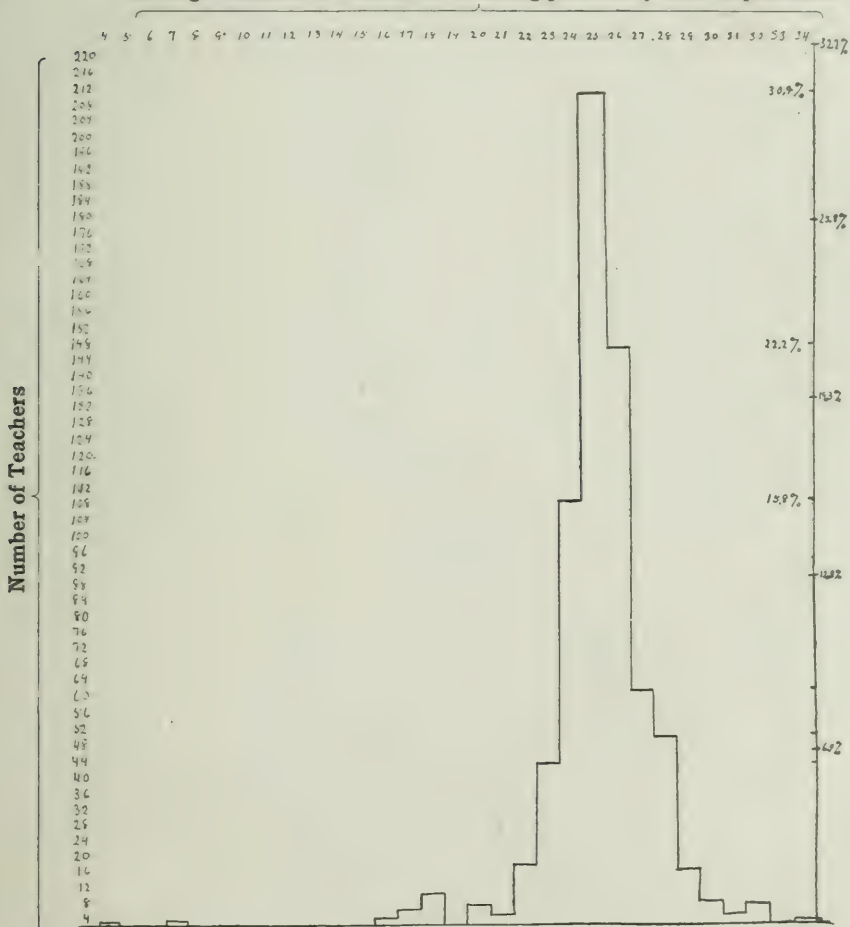
In column "b" is shown the fact that over 50 per cent. of these teachers are assigned duties¹ in addition to teaching and study hall supervision.

Diagram IX

671 Teachers

Main Buildings and Annexes

Average Number of Periods of Teaching plus Study-Hall Supervision



¹ The discussion of the character of these duties will be found on p. 135.

The preceding diagram shows the facts of Table XX in graphic form. (Diagram IX is on page 131.)

This diagram shows very strikingly that teachers are being assigned teaching and study hall supervision according to the maximum standard of twenty-five periods per week. There are only sixteen teachers, or 2.4 per cent. of the 671 teachers, who teach and supervise study halls less than an average of twenty periods per week. Two hundred and seventy-eight teachers, or 41.4 per cent., are doing an average of more than twenty-five periods of teaching and study hall supervision. Three hundred and seventy-seven teachers, or 56.2 per cent. of the 671, are teaching and supervising study halls from twenty to twenty-five periods per week. In marked contrast to the conclusions which might have been reached had we considered only the item of teaching, we now reach the conclusion that about 75 per cent. of 671 teachers are doing an average of twenty-five or more periods of teaching and study hall supervision, or the maximum standard of twenty-five periods of work per week. When one considers that over 50 per cent. of these teachers are also carrying other administrative and clerical responsibilities, and if the work of these teachers is typical of the city, it becomes clear that the total work of these teachers is approximating closely the standard of twenty-five periods per week.

b. Teachers of English

Thus far we have been considering the amount of teaching and study hall supervision done by 671 teachers as a group. In order to measure actual practice in the schools by the standard fixed by Associate City Superintendent Stevens, it is necessary to separate the teachers of English from the teachers of other subjects, because, as already stated, different standards are fixed for these groups.

Table XXI shows the average number of periods of teaching and study hall supervision done by teachers of English in the high schools of New York City.

Table XXI

226 TEACHERS OF ENGLISH

MAIN BUILDINGS AND ANNEXES

	AVERAGE NUMBER OF PERIODS OF TEACHING PLUS STUDY HALL SUPERVISION																											
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34								
Number of Teachers.....	0	0	0	0	0	5	2	0	23	60	76	14	32	2	5	1	0	5	0	1								

Certain facts are brought out by this table: (a) no teacher of English is carrying on an average less than twenty periods of teaching and study

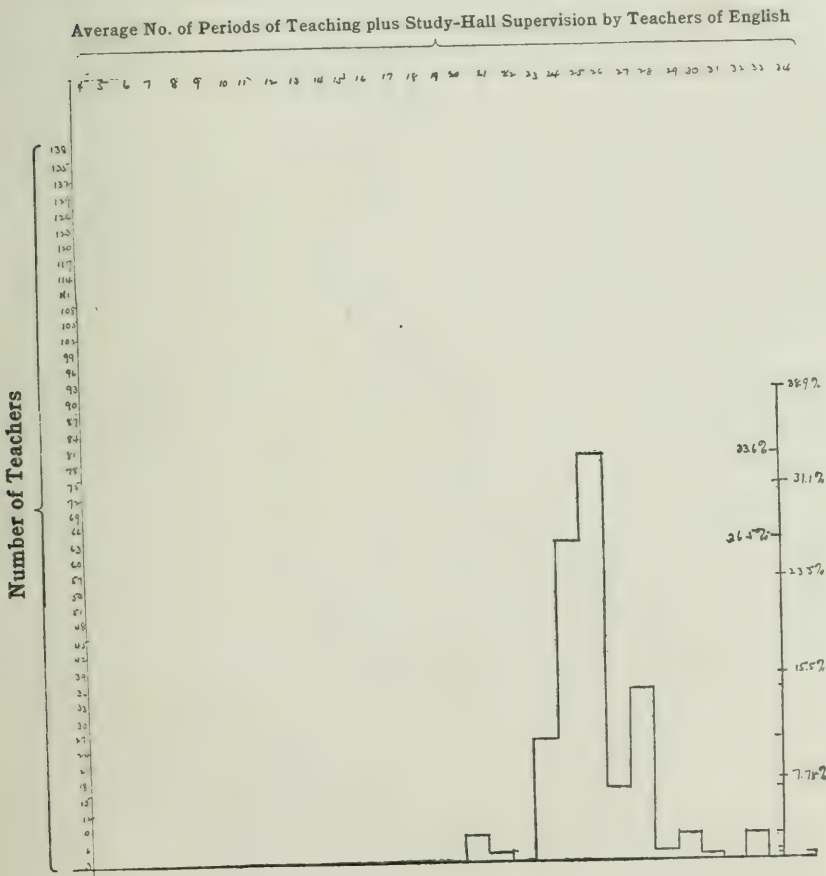
hall supervision; (b) only seven teachers, or 3.09 per cent. of the whole number, are carrying an average of twenty or twenty-one periods of teaching and study hall supervision; (c) 219 teachers of English, or 96.9 per cent., are carrying an average of over twenty-one periods of teaching and study hall supervision; sixty teachers of English, or 26.5 per cent., are carrying an average of more than twenty-five periods of teaching and study hall supervision.

The following diagram shows the facts of Table XXI in graphic form and emphasizes the following points: (1) That 33.6 per cent. of the teachers of English are carrying an average of twenty-five periods of teaching and study hall supervision; (2) that 26.5 per cent. are carrying twenty-four periods; (3) and that 90.7 per cent. of the teachers of Eng-

Diagram X

226 Teachers

Main Buildings and Annexes



lish are carrying from twenty-three to twenty-seven periods of work. It now becomes clear, also, that, even though teachers of English are supposed to have fewer teaching periods than other teachers, their combined work of teaching and study hall supervision approaches very closely the maximum standard of twenty-five periods per week for all teachers.

c. Teachers of German, Mathematics, Biology, and History

Table XXII shows the average number of periods of teaching and of study hall supervision done by teachers of German, mathematics, biology, and history in all the high schools.

Table XXII

445 TEACHERS OF GERMAN, MATHEMATICS, BIOLOGY AND HISTORY.

MAIN BUILDINGS AND ANNEXES

	AVERAGE NUMBER OF PERIODS OF TEACHING PLUS STUDY HALL SUPERVISION																
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Number of Teachers	0	2	4	8	0	0	0	15	18	46	132	131	26	45	9	5	2

¹ 1 teacher with 4 periods, and 1 with 7 periods.

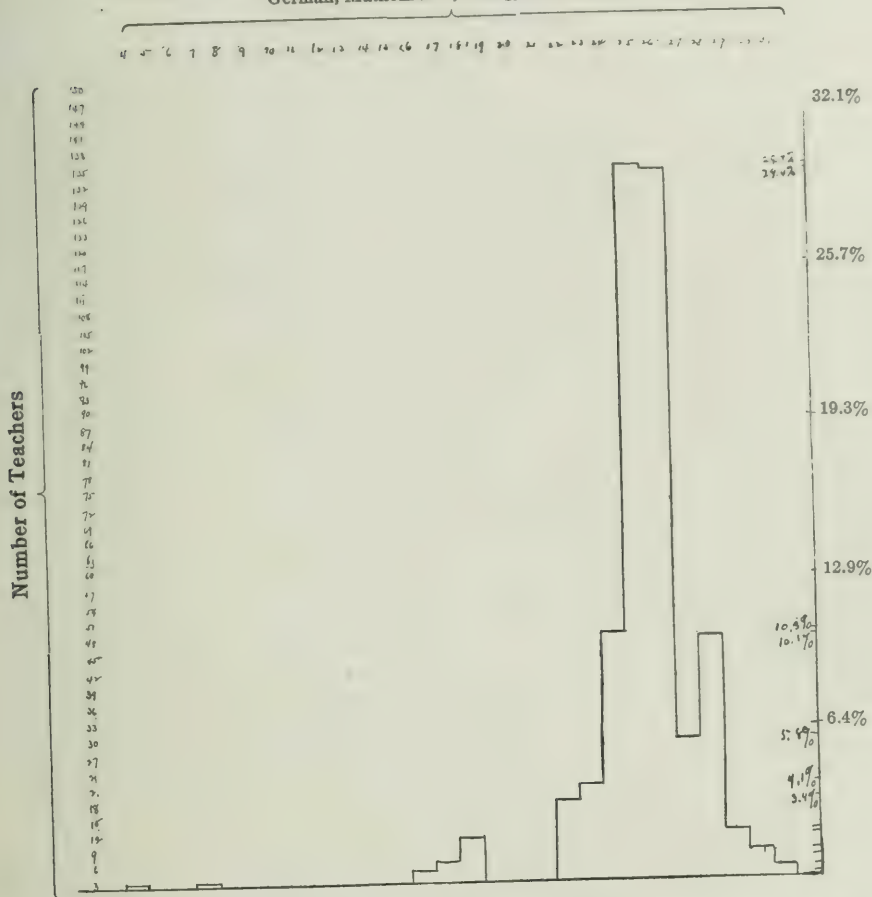
This table brings out the following facts: Sixteen teachers, or 3.6 per cent. of the whole number, are carrying an average of less than twenty periods of work; 218 teachers, or 48.98 per cent. of the whole number, are carrying an average of over twenty-five periods of work; 211 teachers, or 47.41 per cent., are carrying, on an average, between twenty and twenty-five periods of work.

The following diagram shows the facts of Table XXII in graphic form and emphasizes the following points: (1) That 29.7 per cent. of these teachers are carrying an average of twenty-five periods, (2) that 29.4 per cent. are carrying an average of twenty-six periods, and (3) that 92.8 per cent. are doing from twenty-two to twenty-eight periods of teaching and study hall supervision. It now becomes clear, also, that nearly half of the teachers in the departments of German, mathematics, biology, and history are doing more than twenty-five periods of work in teaching and supervision of study hall. When to this amount of work is added their other assigned duties, it is again obvious that the total amount of work done by these teachers is considerably above the standard of twenty-five periods per week.

Diagram XI

445 Teachers

Main Building and Annexes

Average No. of Periods of Teaching plus Study-Hall Supervision by Teachers of
German, Mathematics, Biology and History

2. Other Assigned Duties (in Addition to Teaching and Study Hall Supervision)

(1) Scope and Character

In accordance with the authority vested in the principals by the by-laws of the Board of Education, they have assigned duties other than teaching and study hall supervision to over 50 per cent. of the 671 teachers under consideration. It is impossible to state in terms of teaching periods, the amount of time which these duties consume, and it is very difficult to estimate, in a definite way, the care devoted by teachers to

these other assigned duties. However, they play such a large part in the administration of high schools that it is important and necessary to consider them.

The character of these duties is illustrated by the following assignments:¹ Teachers are put in charge of corridors, basements, and yards during the noon recesses, and they are placed in charge of the corridors during the passing of classes; they are assigned charge of sororities, fraternities, school publications, athletics of various kinds, arrangements for the assembly, the making of the school program, preparation of regents' credentials, supplies, books, rifle team, library, lunch room, orchestra, glee club, infirmary, and bulletin boards. They also act as coaches for the various athletic teams, as prefects of classes, and grade advisers. A careful consideration of the character of these functions shows that they are almost exclusively administrative, and not clerical functions. It cannot be expected, therefore, that they can be performed by the present clerks in the principals' offices; further, the very size of the list indicates that the principals cannot perform them.

Take, for example, the preparation of regents' credentials—apparently a clerical function. While this work involves some clerical work, the making out of these papers requires an intimate knowledge of the course of study and the organization of the school which the present clerks in most of the high schools do not possess. One who has charge of this work must be familiar with the changes in the time allotments of subjects in the course of study over a considerable period of years, because very frequently pupils who attended the school several years previously call for these credentials. It will be obvious, therefore, that, even in the discharge of this function, which appears on paper to be clerical, there is required the knowledge which a teacher rather than a clerk can with reason, be expected to possess.

(2) Classification of These Duties

A general classification of these administrative duties will show that some of them are (a) regular as to amount and distribution of time required; these are hall, basement, yard, and library duty. (b) Those which are regular as to distribution of time, but vary as to amount; these are the preparation of the daily program, attention to late students, arrangements for regents' examinations, and general charge of the lunch room. (c) Those which vary both as to amount and distribution of time; these are charge of supplies, text books, orchestra, fraternities, sororities, student publications, glee club, rifle team, and acting as coach for the athletic teams, work as grade advisor, or prefect of class. Although it is impossible to assign a time value to these duties, yet the responsibility

¹ These items were taken from the "Program of Daily Recitation" sheets furnished the Department of Education by the principals of the high schools in February or March, 1911, and are the actual assignments made by principals to teachers during that term.

of assuming charge of most of them by a teacher is sufficiently serious, so that the principal must consider them when he assigns teaching to a teacher to whom these duties are assigned.

Most teachers in the high schools also have charge of an official class.¹ Each official class teacher, in most schools, performs the following or similar functions:²

(1) Keeps the attendance of pupils. This involves (a) keeping and reporting attendance; (b) computing the average monthly attendance; (c) keeping a list of parents and pupils, and their addresses, and notifying parents of pupils' absences, and (d) keeping an excuse book for absences. (e) It also involves, in some schools, issuing "admits" to classes after an absence.

(2) Care and distribution of text books and supplies. Besides the general supervision of the proper use of books, this involves (a) keeping a card, or book list, of all books given out; and (b) receipting for the books when returned. Classroom work is seriously interfered with at times by pupils getting books when they enter late in the term, or by pupils who return books before leaving school.

(3) Copying records. This means (a) making in duplicate (in some schools, triplicate) the promotion cards of each pupil; (b) copying program cards of each pupil; (c) copying report of each pupil for parents twice or three times each term, and (d) copying marks of each pupil on permanent record cards.

(4) Having charge of discipline of pupils in the official class. In most schools the official class teacher has charge of the conduct of the pupils in the official class during the day.

(5) Disseminating school notices and general information. The teacher in charge of an official class is the general administrative agency for that group of pupils. In some schools, this includes supervising the progress of pupils, while in others, grade advisers do that work.

(6) Looking after wardrobes and lockers; issuing keys, replacing lost keys, and cancelling receipts at the close of the term, or when the pupils leave school.

(7) Counselling with pupils about their election of studies, their progress in their work, and general administrative duties.

The official class seems to be a necessary part of the organization of large high schools, because it brings about harmony and unity of action. It seems to be a satisfactory method of bringing the pupils into direct contact with the administrative agencies of the school. But the danger is that these lesser, but none the less essential, duties of an official class teacher will interfere with the real work of the teacher, namely, teaching. Just so far as the time, strength, and vitality of the teacher are taken for

¹ An official class is for administrative purposes. A teacher may, but usually does not, teach his or her official class.

² This statement is based upon a report made by a Committee of the Women High School Teachers' Association to the Committee on School Inquiry.

other work, whether necessarily or otherwise, just to that extent the work of teaching must be reduced in amount, or suffer in quality. Of course, under such circumstances, the results of faulty administration are visited upon the pupils.

In the marvelous growth of the high schools the amount of necessary administrative and clerical work has increased enormously. Naturally, this work came to be divided among the principal, the teachers, and the clerks. Is it not time to take account of the amount and kind of work which each is doing, with a view to giving to each those functions for which he is paid, and for which he is supposed to be particularly qualified?

A study of the amount of time devoted to the above work in six high schools shows that, in general, the teachers in charge of official classes are giving an average of five hours per week each term to it. The practical questions are these: Can this work be most effectively done by teachers? Is it interfering with the effectiveness of teaching? Could some of it be satisfactorily performed by others at a lower cost? It would appear, from the above enumeration of functions performed, that the teacher in charge of an official class has been gradually charged with responsibility for clerical and administrative duties until her real function (No. 7 above) of guiding and assisting individual students in their work has been largely lost sight of. The situation suggests the need of careful analysis as a basis for action.

(3) Should These Functions Be Assigned to Teachers or to Special Administrative Officers?

It has been shown that there is a large amount of work in each high school, aside from teaching, which is at present assigned to teachers. It is important to consider whether this work should continue to be assigned to teachers, or whether some of it could be performed better by a special administrative officer. The principal now distributes this work to teachers, as far as possible, in accordance with their fitness to do it. It often happens, however, that there is no teacher who is particularly well qualified to perform a certain function, or if such a teacher is found, he or she may not be available for that work at that particular time. If there were in each school one or more administrative officers, who possessed administrative and executive ability, this difficulty would be overcome.

It will be clear that some of the duties must always remain in the hands of the teaching force because of their nature. For example: The general supervision of the corridors for the maintenance of order, requires the attention of several teachers at the same time in different parts of the building, and it is a duty, therefore, which could not economically be assigned to persons other than teachers. On the other hand, such

duties as charge of sororities, fraternities, school publications, athletics, could all be centralized under the direction of one person.

The advantage of having the teachers in charge of most of these administrative functions lies in the fact that the teachers are gaining valuable insight into the administration of the school and thereby increasing their teaching efficiency. Then, too, some of these assigned duties are so closely connected with the life and work of the school that a distinct loss would result if they were taken out of the hands of the teaching staff. On the other hand, the danger of making such assignments to teachers lies in the amount of such work which can be assigned to them without interfering seriously with their teaching. It is quite generally agreed among principals and teachers that, unless the major part of the time and thought of a teacher is given to actual instruction, the assuming of responsibility for administrative functions is likely to prevent the most effective teaching. For example: A teacher who teaches from six to ten periods per week (and there are several cases in the high schools of New York City), and gives the remainder of his time to administrative work, is likely to make administrative work the object of most concern, and his teaching may thereby be seriously impaired. It would seem clear, therefore, that, if these duties are to be distributed among the teachers, such a distribution should be among as many different teachers as possible in order (a) to bring about the cooperation of each teacher in the general administration of the school, and, further, (b) to avoid the necessity of assigning to any teacher an amount of administrative work which would diminish the value of his class instruction.

The advantage of having a separate officer (or officers) (call him assistant principal, secretary, or chief clerk) to perform some of these services lies in the increased efficiency with which these functions would undoubtedly be performed by one possessing administrative and executive ability. Such an officer would always be available at once to take charge of any particular work which it was necessary to have done.

The assistant executive officer with peculiar executive ability would always be ready for service, and, hence, for speed and effectiveness, he would be superior to teachers. On the other hand, the teachers would be gaining an insight into the life and spirit of the school by participating in its administration, and their teaching would, undoubtedly be more effective. For immediate results, the assistant executive might be more advantageous, but, from the larger point of view of the whole school, better results would be brought about if the teachers assumed charge of these administrative functions. Hence, we recommend that these administrative functions be assigned to teachers.

In our conferences with high school principals, our attention has been repeatedly called to two facts, (a) that the clerks furnished the principal's office are too few in number, and often incompetent, and (b) that the Department of Education refuses to recognize that there is any considerable amount of administrative and clerical work in the high

schools which the principal ought to ask teachers to perform. We have been unable to examine the work of the clerks to determine its quality. From the amount of clerical work in the principal's office, and from the fact that teachers and first assistants are doing so much clerical work, we conclude that the number of clerks is not sufficient. As to the second matter, the fact is that principals are at present forced by circumstances to assign such functions to teachers and to relieve them correspondingly of teaching even though it may be, in some cases, in direct violation of the instructions from the Department of Education.

The solution of this difficulty lies in the recognition, on the part of the Department of Education, of the fact that the administrative functions enumerated above are legitimate functions for teachers to perform. Then the principals and the Department of Education ought to differentiate carefully between clerical and administrative work. After a division of the clerical and administrative functions has been made, the schools ought to be provided with enough competent clerical assistants to perform the clerical work, and the principals should then be left free to assign to teachers administrative duties, in accordance with the present by-laws, and to relieve such teachers from their teaching for this purpose. It is absurd to require teachers to perform clerical work which could be performed better by clerks at from one-third to one-half the salary. Further, it is equally absurd to expect teachers to do a full day's work in teaching and then perform administrative functions after school hours, or as "odd jobs."

(4) How Much Time of the Teaching Staff Should the Principal Have At His Disposal for Administrative Purposes?

If principals are to assign all of these duties to members of the teaching staff, they ought to be at liberty to assign them to those members of the teaching staff who are best qualified to perform them, whether they be first assistants, or teachers of lower rank. The principal is held responsible by the educational authorities for the administration of his school, and, consequently, ought to have the authority, within reason, to utilize the members of his teaching staff in the most effective manner.

The amount of administrative work which the principals have to delegate to members of their teaching staff varies according to the size and character of the schools. Any standard, therefore, which provides the principal with the time of his teaching staff for administrative purposes must take this fact into consideration. After a conference with the principals of the high schools on this matter, they proposed the following schedule, which we approve, and recommend for adoption.

The amount of time (in teaching periods) of the teaching staff which the principal should have at his disposal for administrative purposes in high schools of from 1,000 to 4,000 pupils is

1,000 pupils.....	15 periods
1,500 "	20 "
2,000 "	30 "
2,500 "	35 "
3,000 "	40 "
3,500 "	45 "
4,000 "	50 "

The apparent fear, on the part of some, that positions of teachers to whom these duties are assigned, and whose teaching periods are correspondingly reduced, will develop into sinecures, does not seem to us to be well founded, inasmuch as the principals of the high schools can be held as strictly to account for the use they make of this time as they can for the amount of teaching which each teacher now does under their direction.

3. Summary, Conclusions, and Recommendations

We may summarize the foregoing discussion as follows:

1. Of the 671 teachers under consideration, 15.50 per cent. are teaching less than twenty periods; 82.11 per cent. are teaching from twenty to twenty-five periods, and 2.39 per cent. are teaching more than twenty-five periods.

2. Of the 226 teachers of English, 25.66 per cent. are teaching less than twenty periods per week; 32.3 per cent. are teaching more than twenty-one periods, and only 42 per cent. are teaching twenty or twenty-one periods—the standard fixed by the Department of Education.

3. Of the teachers of German, mathematics, biology, and history, 10.3 per cent. are teaching less than twenty periods; 2.7 per cent. are teaching more than twenty-five periods, and 86.96 per cent. are teaching from twenty to twenty-five periods—the standard fixed by the Department of Education.

If study hall supervision is added to teaching, the following results are obtained:

1. Of the 671 teachers, 2.4 per cent. are doing less than twenty periods of work; 41.4 per cent. are doing more than twenty-five periods of work, and 56.2 per cent. are doing from twenty to twenty-five periods of work.

2. Over 50 per cent. of all the teachers have administrative duties to perform in addition to teaching and study hall supervision.

3. Of the teachers of English, none are doing less than twenty periods of teaching and study hall supervision; 3.09 per cent. are doing twenty or twenty-one periods of work; 96.90 per cent. are doing over

twenty-one periods of work; 20.5 per cent. are doing over twenty-five periods; and 33.6 per cent. are doing twenty-five periods.

4. Of the teachers in other departments under consideration, 3.6 per cent. are doing less than twenty periods of work; 48.98 per cent. are doing more than twenty-five periods of work, and 47.41 per cent. are doing from twenty to twenty-five periods.

Our analysis of the work done by teachers has led us to the following conclusions and recommendations:

1. Over 15 per cent. of the teachers under consideration are teaching less than the minimum standard—twenty periods—because they are doing work other than teaching. Are not some of these teachers doing too little teaching? We recommend that the Committee on High Schools of the Board of Superintendents¹ investigate the question and report to the Board of Superintendents.

2. If to teaching we add study hall supervision, we find that only a trifle over 2 per cent. of the teachers are doing less than twenty periods; and that over 41 per cent. are doing more than twenty-five periods of work (i. e., they do not have a free period each day). Are not some of these teachers doing too much work? We recommend, as before, that the Committee on High Schools of the Board of Superintendents investigate the question and report to the Board of Superintendents.

3. In addition to teaching and study hall supervision, over 50 per cent. of the teachers have other assigned duties.

4. We find, on examination, that some of these other assigned duties are purely clerical, and that a large part of them are administrative.

5. We recommend that the principals and the Board of Superintendents differentiate very definitely between what is clerical and what is administrative work.

6. We recommend (a) that the principal of each high school be furnished a sufficient number of competent clerks to perform the clerical work, and (b) also, that the principal of each high school be definitely allowed a certain portion of the time of his teaching staff for the discharge of such administrative functions as he finds it necessary to assign to them.

¹ In view of the fact that Professor Elliott recommends that the Board of Superintendents be abolished, and that a Bureau of Investigation and Appraisal be constituted in its stead, the matters in this report referred to the former Board would naturally be taken up by the latter.

(IV) ADMINISTRATIVE CONTROL OF THE HIGH SCHOOLS,
AS IT AFFECTS INTERNAL ORGANIZATION

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(IV) ADMINISTRATIVE CONTROL OF THE HIGH SCHOOLS, AS IT AFFECTS INTERNAL ORGANIZATION

Introductory

Our studies of the size of sections, the work of teachers, and the courses of study have brought into prominence certain questions of administration which affect directly the internal organization of the high school. For example, in our study of the size of sections, we have found that there were small sections which could apparently have been avoided by a better distribution of pupils; and there were large sections which could apparently have been reduced by the employment of additional teachers. Are the principals, in the preparation of their daily programs, making the most effective distribution of pupils in sections, both from an economic and an educational point of view? Why are not more teachers employed to reduce over-size sections, or, at least, to make it possible for the principal to maintain approximately the established standard size of sections? Again, in our study of the work of teachers, we found that the first assistants are assigned so much teaching and administrative work that they have little time for their work as chairmen of departments. Why are not more teachers provided so that first assistants may have the time needed for their work as chairmen of departments?

Certain administrative questions grow out of Professor Davis' study of the courses of study in the high schools: What is the plan of the Board of Superintendents (a) in determining the program of studies¹ for a given high school; (b) in fixing the prescribed work and the elective work in a curriculum; (c) and in fixing the time allotments? (d) What is the most effective method of preparing courses of study, and (e) what is the best type of high school for New York City?

And, finally, there are at least two important general questions of high school administration which must be considered, namely: 1. The proper size of high schools for New York City; 2. the effect of the size and number of classrooms on the organization of the high school.

Satisfactory answers to all the foregoing questions underlie effective high school organization and administration. It will be observed that the principal of the school is responsible for conditions suggested in some of

¹We are using the terminology adopted by the Committee on College Entrance Requirements: "Three distinct terms seem to be needed: (1) *Program of studies*, which includes all of the studies offered in a given school; (2) *curriculum*, which means the group of studies schematically arranged for any pupil or set of pupils; (3) *course of study*, which means the quantity, quality, and method of the work in any given subject of instruction." Report, p. 108.

the questions, and the Department of Education¹ for the others. These questions will be considered from the standpoint of the agencies which control effective high school organization, dividing that general topic into two parts: A. The principal in his responsibility for making the daily program, and, B. The Department of Education in its responsibility for: 1. The program of studies; 2. The size of the school; 3. The size and number of classrooms, and, 4. The number of teachers employed.

A. The Principal's Responsibility for the Daily Program²

At first it would appear that the principal is the most important agency in determining the size of recitation sections in his school, because he determines into how many sections the pupils taking a given term's work are divided. Indeed, our study of the size of sections³ in certain selected schools has shown that some principals, in making their daily programs, have been responsible for organizing both large and small sections in the same term's work, each of which could have been avoided by a different distribution of pupils. This raises the question of making the daily program by the principal.⁴ The making of the daily programs in the various high schools has not been the subject of a special study for two reasons: (1) The lack of time after the need of such a study was revealed, and (2) the general administrative control is such, in many cases, as to limit the possibility of the principal's making an effective daily program.

(1) Our study of the size of section, of the work of teachers, and of the general administration of the high school system, brought to light the need of a special study of the daily programs. After these studies had been completed the time at our disposal did not permit a study of how to make a daily program.

(2) The principal does not control all the factors which affect the organization of his school. He is subject to the standard size of section and the standard amount of work for teachers fixed by the Board of Superintendents. The organization of his school also depends on the program of studies, the size of the school, the size and number of classrooms, and the number of teachers employed. The Department of Education, or the Board of Superintendents, or the Board of Education, separately, is charged by the by-laws⁵ with the responsibility for each of these factors. How has the Department of Education discharged its responsibility for the program of studies, the size of the high schools, the size and number of class rooms, and the number of teachers employed?

¹ I. e. The Board of Superintendents and the Board of Education.

² The daily program is the schedule of class recitations, room assignments of classes, and teaching assignments, followed each day for one term in a given school.

³ As shown on pp. 82, 85, and 88.

⁴ Or by the person or persons to whom he delegates that function.

⁵ By-Laws, Board of Education, 1909: Section 40, paragraphs 7, 8, 9; section 21, paragraph 7; section 16, paragraph 1.

Although it will be anticipating the detailed discussion in the following pages, it may be stated here that there is not a high school in New York City which is satisfactory, or which approaches approximately a satisfactory condition, with respect to the program of studies, the size of school, the size and number of class rooms, and the number of teachers employed. The time allotments for studies in every course of study in the high schools are haphazard; they show no well conceived plan to make possible an effective daily program for a school. While the size of most school buildings is enormous, an attempt is being made in every one of them to care for many more students than the building was designed for. As a result, there is a dearth of satisfactory class rooms; pupils are being accommodated in unsatisfactory rooms in main buildings or in annexes. The size of sections ranges very small and very large as a direct result. The method of increasing or decreasing the number of teachers in a department of study by creating new teaching positions, or by declaring "teachers in excess," does not provide teachers where they are needed, and leaves teachers in schools where their services are not needed. This unfortunate condition arises from the fact that the data on which such reorganizations are based are inadequate.

In view of these conditions, considered in detail in the discussion following, it is impossible to credit the effectiveness or to charge the ineffectiveness, of the organization of any high school to the principal. The factors affecting that organization do not lie within the province of the principals so much as they do in the authority above them, viz., the Department of Education. The improvements in the effectiveness of high school organization and administration must be made, in a large part, in the authority in general control of the high school system.¹

The effective internal organization and general administration of the high schools in a school system depends, not on one agency, but on several agencies. As has been stated, the internal organization of any given high school within the school system depends not only on the principal, but also on all administrative authorities who exercise any control over the high schools. This joint responsibility of the principal, and the general administrative authorities for effective internal organization, requires that the principals and the Department of Education work together for the solution of problems common to both, and in bringing about satisfactory conditions throughout the high school system.

General administrative control of the high schools is effective when it renders most satisfactory all conditions affecting the work of teachers and pupils. Among other things, effective administration would provide a sufficient number of high schools of satisfactory size to meet the needs of the community which the school system is to serve; it would provide the different kinds of education needed by the different types of pupils, and it would provide a sufficient number of teachers so that (1) no teach-

¹ See Professor Moore's report on the Board of Education, and Professor Elliott's report on the Board of Superintendents.

ers would be required to do an unreasonable amount of work, and so that (2) a reasonable size of sections could be maintained.

General administrative control is successful when it promotes effective internal organization of the high schools, which, in turn, provides the education which each pupil needs; it is unsuccessful whenever, through neglect, or unwise action, it prevents or hinders effective internal organization. Ineffectiveness in organization, or in administration, no matter what the cause, is always visited on the pupils in one form or another.

In order that the general administrative direction or control of the high schools may be most effective, there must be well-conceived plans, methods, and purposes, worked out on the basis of the educational needs of the community to be served. For example, the administrative agency which prepares the courses of study for the high schools must do so on the basis of the knowledge which comes from having seen specific needs. A course of study must be not merely a logical, well-organized body of facts; it must also be selected and organized to serve a well defined purpose.

Again, the amount of teaching, or other work, which teachers should do each week should be fixed after the administrative agency has seen specifically what teachers are doing, how effective their work is, and whether it is legitimate work for teachers to perform. On the basis of this knowledge, the amount of work teachers may reasonably be expected to do can be wisely fixed.

And so every act of the controlling administrative agency should be based on knowledge which comes from direct contact with the schools, the principals, the teachers, and the pupils. The agency which determines the size of recitation sections, the size of classrooms, the proper size of high school for New York City, the best type of high school for New York City, and the location of high schools, must be in sufficient contact with the schools to see what the pupils need.

The high school principals should play a prominent part, not only in the internal organization of their respective schools, but also in the general administration of the high school system, because they are nearer the actual problems of education than either the Board of Superintendents or the Board of Education. The knowledge which the principals and teachers possess should be made use of regularly in all general administrative matters affecting the internal organization of the high schools. Improvement in the organization and administration of the high schools should come through an organization in which principals and teachers shall not only be permitted, but expected or required, to contribute the results of their experience, and their knowledge to the solution of high school problems.

B. The Department of Education¹ In Its Responsibility for—

1. The Program of Studies²

(1) It has been found³ that the number of pupils in sections in upper terms, even in the largest high schools, is inevitably small as compared with those in the first terms, and this, too, in schools with one curriculum. If there are two or three differentiated curricula, obviously the divisions of pupils must be more numerous, and the number of pupils following each curriculum must be correspondingly reduced. As the number of pupils following a curriculum is reduced, it is obvious that the possibility and probability of small sections in upper terms of work are increased. If this be so, then the sections in the high school with only one curriculum for a given number of pupils can be more effectively organized than in the school with two or more curricula.

Has the Board of Superintendents considered the extent to which the larger number of curricula ("general," "commercial," "manual training," ".") in a school increases the number of small sections, and, hence, increases the amount of teaching to be done to care for a given number of pupils?

(2) Again, it is obvious that the greater the number of subjects open to election by pupils in a given term of work, the more numerous will be the divisions of pupils, and, hence, the greater the probability of an increase in the number of small sections in the upper terms. Small sections increase the per capita cost of instruction. And yet this more expensive instruction may produce commensurate educational returns because better adapted to the needs of pupils.

Has the Board of Superintendents considered to what extent, if any, the number of electives in a curriculum increases the cost of instruction, and whether the increased cost, if any, produces commensurate educational returns?

(3) Still further, a heterogeneous time allotment,⁴ such as is found in New York City high school curricula, in which subjects are offered, some one period, some two periods, some three periods, and so on up to

¹ The Department of Education—i. e., the Board of Superintendents and the Board of Education. The Board of Superintendents is the subject of an investigation by Professor Elliott, and the Board of Education by Professor Moore; hence, the discussion here will have to do only with high school administration, as it affects the internal organization of the high school. See special reports.

² The programs of study in the various high schools are the subject of a report by Professor Davis, hence, only certain questions of administration will here be raised concerning the curricula of the various schools.

³ See tables filed with the Committee on School Inquiry.

⁴ See Professor Davis' report.

six periods, or, in the case of manual training, eight periods per week, creates a situation in which it is extremely difficult to make a satisfactory daily program for a school. The daily program is to the school what the time table is to the railroad. All factors which affect the daily program bear a direct relation to the effectiveness of the instruction, and to the economic organization of the school.

Has the Board of Superintendents followed any well conceived plan in determining the time allotments for high school subjects? Has it considered the daily program of the school in determining time allotments?

The lack of any evidence in the printed documents of the Board of Superintendents, together with the state of affairs, which we find in the schools, lead us to answer these questions dogmatically in the negative.

In connection with our discussion of the program of studies, it is pertinent at this point to make certain recommendations concerning a method of preparing courses of study, and the best type of high school for New York City.

(2.) Recommendations

A. On preparing Courses of Study. The courses of study should be subjected to continual¹ revision and modification by committees of high school principals and teachers, and a corresponding committee of the Board of Superintendents, working together. Those best qualified to judge the administrative effectiveness of the courses of study are the principals, together with those to whom they delegate the task of program-making. Those best qualified to judge the educational effectiveness of the courses of study are those who teach them and those who directly supervise that teaching. With the high educational and professional standards for appointment to the New York City high schools, the teachers are well qualified and competent, both in training and in experience, to take a prominent part in such work. There is every reason, therefore, for including the principals and teachers in the committees which have under consideration the revision of the courses of study, because each can contribute essential points of view which can be obtained by the Department of Education in no other way. By such a method of revision, the principals' knowledge of administrative difficulties and the practical experience of the teachers would be brought to bear upon the choice of subject matter, the purpose, and the feasibility of the courses of study. The above recommendation contemplates more than the inviting of individual teachers in the various high

¹ Of course, this does not mean that a course of study shall be changed at any time, and by any self-constituted critic. Such a revision would certainly result in demoralization. It does mean that a course of study should be at all times the subject of careful, sympathetic criticism by all those who have anything to do with organizing or administering it, and that it should be changed gradually.

schools to assist the Board of Superintendents in the occasional revision of courses of study. It contemplates the establishment of regular channels of communication between organizations of principals and teachers through which the workers in the schools may always find an approach to the central educational authorities. And, on the other hand, it contemplates that such communications shall receive attention, and form the basis for cooperative consideration. Only by some such method of utilizing the experience of principals and teachers can the system of high schools profit by its mistakes and its successes in making courses of study.

B. On the best type of high school for New York City. Should it be the cosmopolitan high school, offering several different curricula, or should it be a specialized high school, devoting itself to one line of work for a particular group of pupils, or should the high school system contain both types? To put the matter more specifically, should the typical high school of New York City be Bryant, in which there are a "general course," a "manual training course," and a "commercial course," or should the typical school be a specialized high school, examples of which are Boys' High School, Brooklyn (largely college preparatory), Stuyvesant High School, Manhattan (technical and scientific), and the High School of Commerce, Manhattan? The answer to this question involves not only the effective internal organization of the school, but it also involves the whole policy of the Board of Superintendents and the Board of Education, concerning the size, number, and character of the high schools of the city. If the high school buildings hereafter constructed, are built as large as the present high school buildings, it is obvious that fewer such schools will be built than if they were built half the present size. The number of high schools which are scattered throughout the city determines the proximity of pupils to high schools. As the number of schools increases, high schools are inevitably brought nearer to the school population to be served. The matter of the size and number of high schools is well stated by Superintendent Maxwell:¹

"It is beyond question that a large number of small or moderate-sized high schools, situated so as easily to accommodate populous neighborhoods, will attract a larger number of high school students and will, other things being equal, give a better education (that word being used in its widest sense) than a small number of very large high schools, widely separated and accommodating an equal number of students."

The chief disadvantage of the specialized high school is that it may require pupils to travel long distances. The means of travel and the areas of congested population in New York City tend to minimize, if not to overcome, this disadvantage. In some sections of the city, as in the present case of Far Rockaway or Staten Island, it may always continue to be advantageous to provide only one high school to serve a commun-

¹ From Eleventh Annual Report of the City Superintendent of Schools, of the City of New York, for year ending July 31, 1909, pages 111 and 112.

ity. But, in general, all things considered, the specialized type of high schools seems to us best.

We favor the specialized type of high school with a single curriculum for New York City for the following reasons: (1) It can be more effective educationally because (a) its whole activity is concentrated on a single purpose, and (b) all of the work can be made to conform to the specific purpose of the school in a way that it could not if the school undertook to serve more than one purpose; (2) the specialized type of school can be more effectively organized and, hence, more economically administered, because (a) all pupils in a given school will be pursuing more nearly the same line of work, and because (b) the classes will not be so nearly depleted in the upper terms, as they now are in various schools having more than one curriculum.

C. On the Questions Raised. We recommend that each one of the questions raised above (pp. 149-150) be the subject of thorough-going study by the Board of Superintendents and the Board of Education to the end that the future policy of the Department of Education may be based upon adequate data.

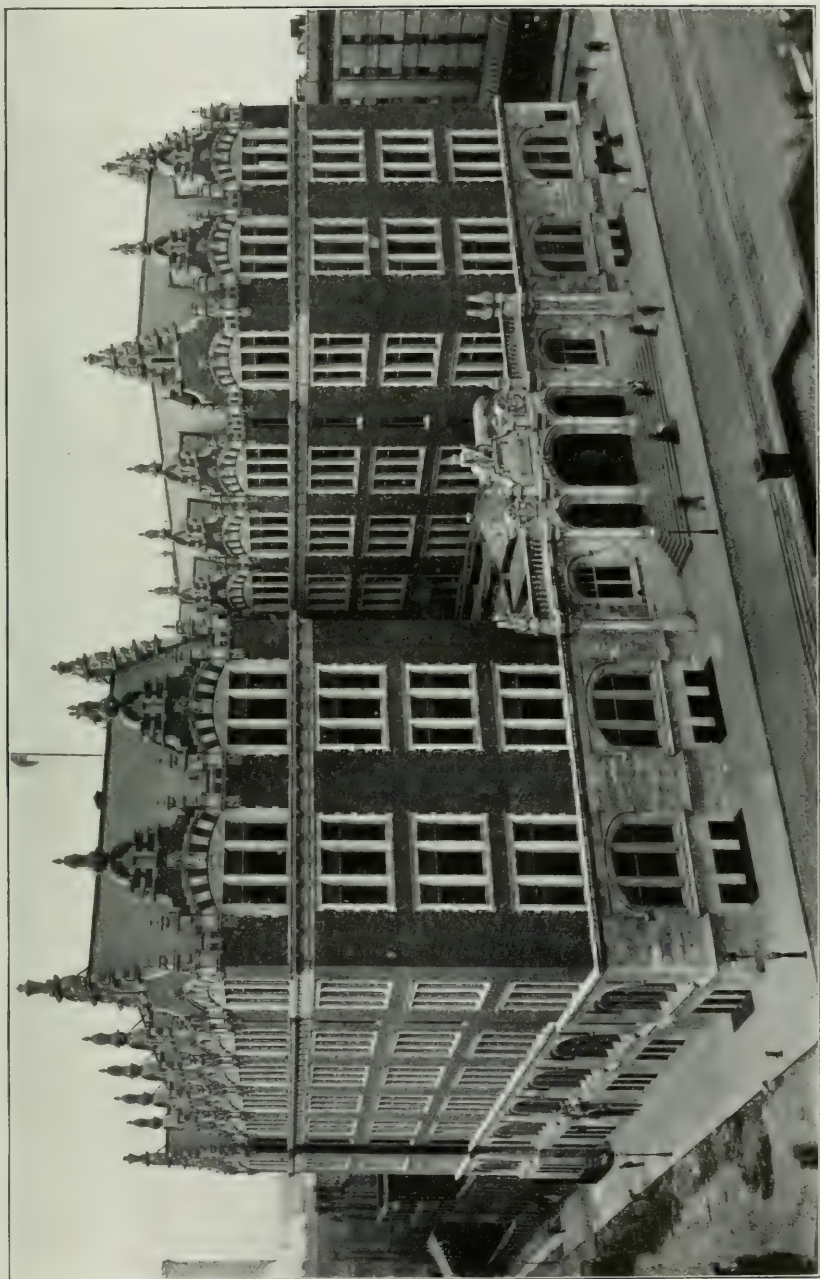
2. The Size of High Schools

The effectiveness of the organization of a high school also depends upon the size of the school. A standard size of section cannot be as closely approximated in a high school with 500 pupils as it can be in a high school with 1,500. There will be relatively fewer students in each term of work in every subject in the smaller school.¹ The problem in the small school is to get enough pupils to make sections of reasonable size; the problem in the large school (and this is largely the problem in New York City) is to keep the sections small enough for effective work.

Has the Department of Education considered the effectiveness of instruction in, and administration of, the larger high schools, as compared with the smaller schools, in order to determine upon a future policy?

The size of the high schools in New York City will be discussed as follows: (1) What is the proper size of a high school in New York City? (2) What is the present size of high schools in New York City? (3) Our recommendations.

¹To illustrate: A group of fifty pupils in a given term's work would not be unusual, but these pupils should always be divided into two relatively small sections for instruction. The number of such sections in the smaller high school, will inevitably be relatively large. In the large high school, there will be several sections of pupils in nearly every department of study, and the size of section, therefore, is more largely within the control of the principal, and a given standard can be more nearly maintained.



DE WITT CLINTON HIGH SCHOOL, MANHATTAN.

(One of the largest high schools in the City of New York. Number of Teachers (June, 1911) 95; Number of Pupils on Register (Oct., 1911), 3,169.



(1) What is the Proper Size?

A. A high school ought not to be so large as to prevent a principal from really being the executive and supervising head of his school.

The by-laws make the principal responsible for the administration of his school; the amount of his responsibility depends largely upon the size of his school. Obviously, he should not be charged with more responsibility than he can effectively carry. As an executive, he has three principal relationships to maintain—(a) to pupils, (b) to parents, and (c) to teachers.

(a) A high school ought not to be so large as to make it impossible for the principal to keep in close touch with the work of individual pupils, either personally or through a single intermediary. The school should not be so large as to prevent the principal from giving advice and counsel regarding the school's relation to the present and future purposes of the pupils. The principal ought to become personally acquainted with most, if not all, of the pupils who remain in the school for some time, for the pupils' sake, and for his own. For pupils to come in contact with the principal's personality ought to be valuable to them. The successful administration of the school by the principal depends upon his intimate knowledge of, and detailed insight into, the work of the pupils. There is no substitute for it; in no other way can he make his school serve the pupils, except by his knowledge of their needs, and his adaptation of the work of the school to those needs.

(b) The school ought not to be so large as to prevent the principal from conferring with every parent who seeks his counsel. The office of the principal is really a trusteeship created for certain educational purposes; the principal ought not to be prevented from performing his functions—one of which is to serve parents—by being overloaded with other duties, or with too many executive and administrative functions. In other words, counselling with parents is one of his functions, and the school ought not to be so large as to increase the amount of that work to such an extent as to make it disproportionate to his other responsibilities.

(c) And, finally, the school ought not to be so large as to prevent the principal from supervising carefully the work of each teacher for the improvement of the teachers, and in order that he may unify the work of the school. Further, if, as in New York City, the principal is required to rate or grade the work of each teacher each term, he must have time to do it. He cannot do this effectively, if the number of teachers is too large.

B. A high school ought not to be so large that its size interferes with its effective administration.

The inevitable administrative difficulties, due to large numbers of pupils and teachers, are increased in a large school out of proportion to the number of pupils and teachers. The commotion in the halls, caused by the passing of classes, and the crowding in cloak rooms, lunch rooms, and locker rooms increase problems of order and discipline in geometrical progression rather than in direct proportion to the number of students.

C. A high school ought not to be so large as to prevent the assembly of all pupils at one time in the auditorium for general school purposes.

The assembly is one of the means through which the principal may impress his personality and his ideals upon the student body. It also affords a valuable opportunity for creating school spirit, and for inculcating important moral lessons. For all of these things, the assembly of all the students at one time is desirable and essential. In like manner, the school should not be so large that adequate gymnasium and lunch room facilities cannot be effectively provided.

(2) What Is the Present Size of High Schools in New York City?

A. Statistics on Size

Table XXIII shows the high schools in New York City, the number of teachers,¹ the number of pupils,² in the main buildings and in the annexes, together with the total number of pupils in each school. (Table XXIII is on page 155.)

It will be observed that the number of pupils ranges from 239 in Far Rockaway High School, to 3,169 in DeWitt Clinton High School. The largest high school in the city is Washington Irving, containing 3,899 pupils, but this school is located in six different buildings. Can the principal of one of these large schools be the executive head of his school? Can he discharge his obligations to pupils, to parents, and to teachers?

B. Discussion of Size

a. *Can the Principal Discharge His Responsibility to Pupils?* In each of twelve out of the twenty high schools, there are more than 1,500 pupils; in each of eleven, more than 2,000; in each of eight, more than 2,500; and in each of five, more than 3,000 pupils. It is perfectly obvious that the principal cannot give individual attention to 2,000 or 3,000 pupils; that, for example, he cannot know how pupils are getting on in their work, or how well the course is adapted to their needs.

The writer called one morning at the office of the principal of a school of over 3,000 pupils, when the principal was going over the mid-

¹ Number of teachers June 30, 1911.

² Number of pupils on register October 31, 1911.

Table XXIII

HIGH SCHOOLS	No. of Teachers	No. of Pupils in Main Buildings	No. of Pupils in Annexes	Totals
DeWitt Clinton.....	95	3169	....	3169
H. S. of Commerce.....	61	2096	....	2096
Stuyvesant.....	83	2082	....	2082
Wadleigh.....	107	2371	447	2818
Washington Irving.....	133	762	3137	3899
Morris.....	113	2586	751	3337
Girls'.....	112	1828	886	2714
Boys'.....	69	1072	706	1778
Erasmus Hall.....	120	2653	624	3277
Manual Training.....	123	2307	706	3013
Commercial.....	92	2012	368	2380
Eastern District.....	87	2011	640	2651
Bushwick.....	26	442	732	1174
Bryant.....	39	962	....	962
Newtown.....	27	807	....	807
Flushing.....	27	517	....	517
Far Rockaway.....	12	239	....	239
Jamaica.....	36	871	....	871
Richmond Hill.....	32	727	....	727
Curtis.....	35	825	53	878
	1429	30339	9050	39389

term report cards before sending them to parents. The mere mechanical labor of handling these hundreds of cards would take days of the principal's time; of course, he could not examine them carefully enough to gain an idea of the work of an individual pupil, or to obtain information concerning the work of the 100 or more teachers in his school. And yet, as an executive and administrator, he is held responsible for the work of his pupils and his teachers.

b. *Can the Principal Discharge His Responsibility to the Parents?* Conferences with principals have confirmed our opinion that principals are unable to confer with all parents who desire to see them, or all parents whom the principals desire to see. In a well organized school, working under favorable conditions, a considerable number of parents will come to the school. In these large schools, principals are compelled to adopt some plan of referring parents to various teachers. On the other hand, the principal would, at times, like to invite parents to the school to confer about failures of pupils, but he feels unable to do so because of the amount of work involved. And yet, this should be a vital part of the principal's work as an executive.

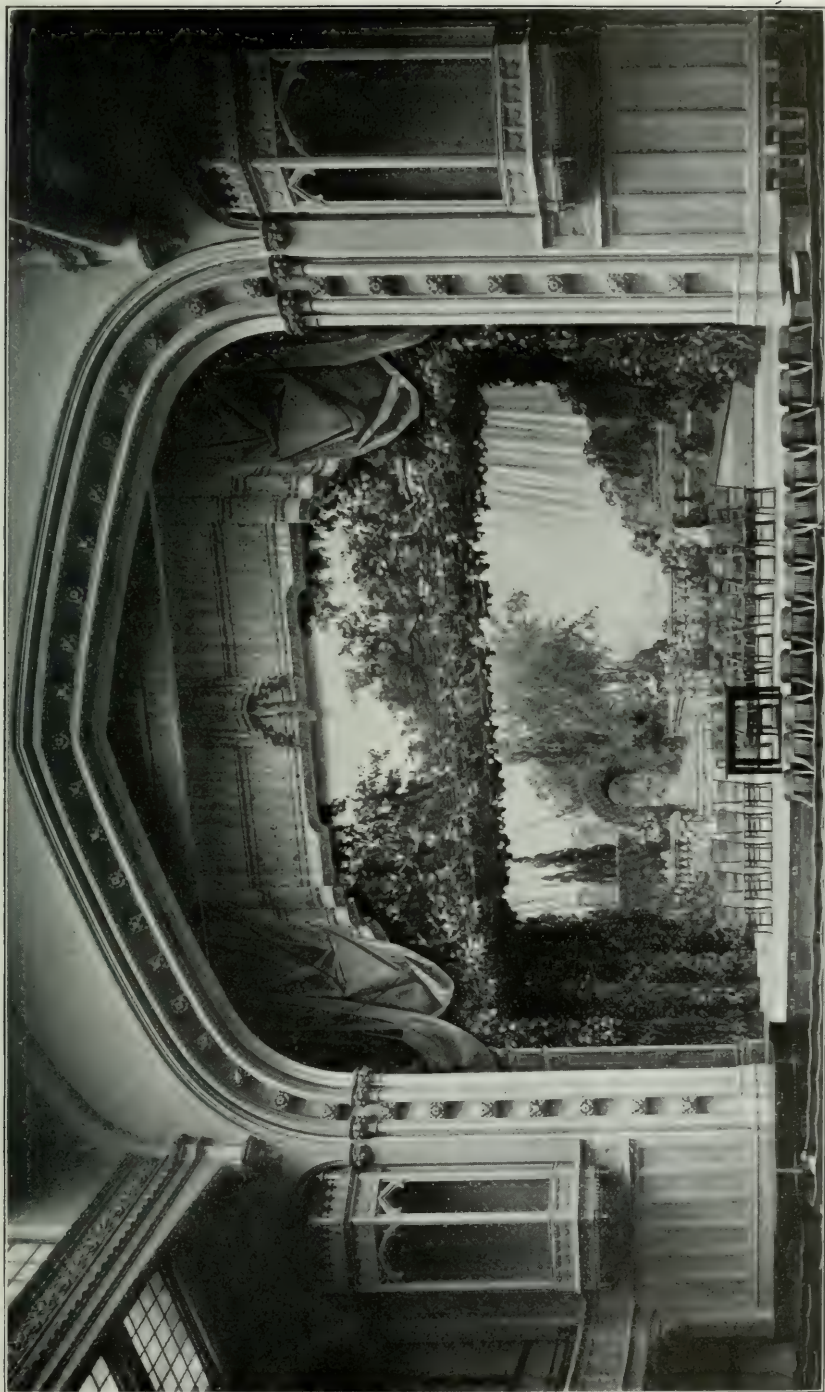
c. *Can the Principal Discharge His Responsibility to the Teachers?* In the larger schools, the number of teachers ranges from about sixty to

133. With each function of the principal of proportionate size, that of observing the work of the teachers, to grade them, and to assist them in improving their work, must receive only its proportionate time. Hence, the principal has very little time for constructive supervision. Suppose there are 120 teachers in a high school and the principal visits each one twice each term, spending a whole period each time.¹ On the basis of six periods per day and five days per week, the principal can make thirty visits each week. If the principal visited every period per day, it would take him eight weeks to complete this visiting alone. If he visited half the time each day, he would spend sixteen weeks, or nearly all of the available time in a term. Of course, where the school is divided among six different buildings, as is Washington Irving, or between the main buildings and annexes, as are eleven schools, the amount of time consumed in visiting teachers would be increased accordingly. The lack of careful supervision has resulted, and is likely to continue to result, in a feeling on the part of some teachers that the principal's grading is not fair: the teachers do not believe that the principal spends enough time with them to justify his judgment concerning their work. On the other hand, when the principal lacks the time to do the work well, he is likely to err on the side of generosity, and grade teachers higher than he should. The importance of grading teachers has been recently augmented by the "Equal Pay" law, which provides that the teacher's increase in salary, beyond the ninth and twelfth years, is contingent upon that teacher being declared "fit and meritorious," or of "superior merit." The grades which principals have given teachers in the past have played a prominent part in the determination of this "declaration" by the Board of Examiners. Where such great educational and financial responsibility rests on the principal, he should have not only the capacity, but the time for discharging that responsibility. It is doubtful, therefore, whether the principal can discharge his responsibilities as the executive head of one of these large schools.

d. *Does the Size of the School Interfere With Its Administration?* It is the general opinion of the principals and teachers of these large high schools that, as administrative units, they are too large. This opinion we share.

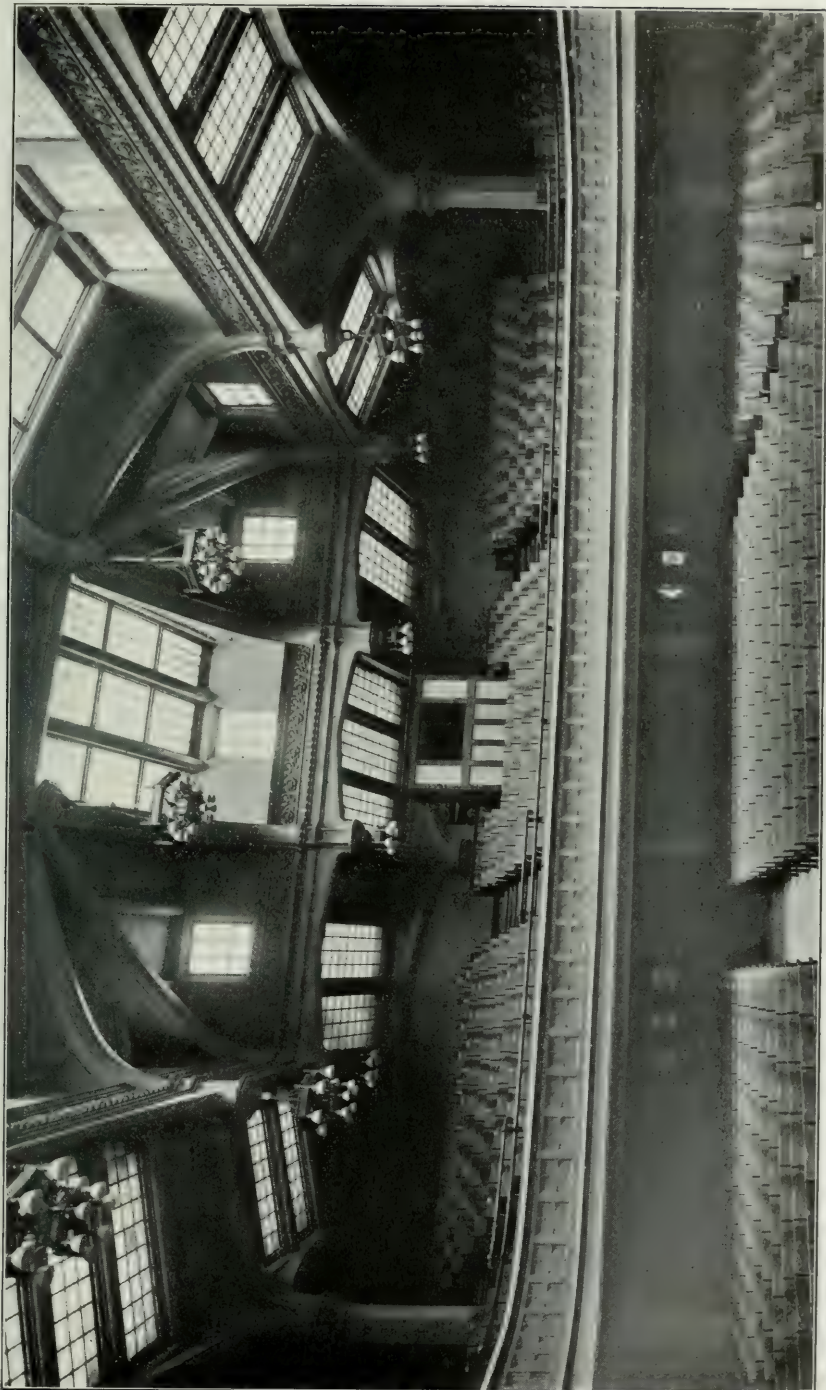
e. *Can All Pupils Be Assembled At One Time?* There are only three high schools in the city affording accommodations for assembling all pupils at one time. The usual plan is to divide the pupils by classes, and hold assembly on different days for different groups of pupils, duplicating the program for each group.

¹ We have elsewhere defended the two propositions, first, that one visit is an insufficient basis for giving a grade, and, second, that the supervisor should spend a whole period in the room. See p. 117.



AUDITORIUM OF WASHINGTON IRVING HIGH SCHOOL.

Photograph taken from Balcony.



AUDITORIUM OF WASHINGTON IRVING HIGH SCHOOL.

Photograph taken from Stage. The Washington Irving High School is the largest high school in the City of New York. It cost over \$1,000,000, not including site. Number of Teachers (June, 1911) 133; Number of Pupils on Register (Oct., 1911), 3,899.



C. High School "Annexes"

The size of the high schools has developed the "annexes"—parts of the school in separate buildings.

a. *Importance of Considering Them.* The following facts suggest the importance of considering these annexes in some detail:

1. There are twenty high schools and twenty-one annexes, or an average of more than one annex for each high school in New York City.
2. There are 39,389 pupils in all of the high schools and annexes, of whom 9,050 are in the annexes. That is, 22.98 per cent. of all high school pupils in New York City are in annexes.
3. There are 27,919 pupils in the eleven schools which have annexes, of whom 9,050 are in the annexes. That is, 32.41 per cent. of the pupils in high schools with annexes, are in the annexes.

b. *Definition, Location, and Equipment.* A high school annex in New York City means a separately organized body of pupils and teachers in a building separate from the main school. Nevertheless, for all general purposes, these pupils and teachers are considered an integral part of the main school. The annex is under the immediate direction of a "teacher-in-charge," who is usually of the rank of first assistant. Such a "teacher-in-charge" receives \$500 additional salary, provided there are twelve or more classes in the annex.

The location of an annex is determined largely by the school population to be served. An annex must be located, however, in an elementary school building, where rooms can be made available for its use. In most cases, the annex does not crowd the work in the elementary school. But there are exceptions; e. g., the annexes of the Morris High School, in The Bronx, are crowded into elementary school buildings which are badly needed for elementary school classes.

The general equipment of the building in which the annex is located is, of course, the equipment of the elementary school. In many cases, only the first two or three terms of work are offered in the annex, although, in some cases, as many as three years of work are offered. In any case, biology must be taught, and, in the cases of some annexes, manual training and commercial work are offered. In general, the apparatus for science work, manual training, or technical work in the annex is inferior to the apparatus in the main building.

c. *Organization.* The organization of the annexes will be considered from the standpoint of (a) personnel of the teachers in the annexes; (b) changes among teachers; (c) the amount of work done by teachers; (d) the size of sections in the annexes, and (e) changes among pupils.

(a) The personnel of the teachers. Different plans are followed by different principals in assigning teachers to the annexes. Some principals assign a teacher for a year only, rotating teachers from year to year through the annex back to the main building. Other principals assign teachers to teach in an annex who live in that vicinity and prefer to teach there. It is the prevailing opinion among teachers, however, that inferior teachers are assigned to the annexes, and are kept there as long as possible.

(b) Changes among teachers. Wherever the plan exists of rotating teachers through the annex and back to the main building, there is an entire change of teachers in the annex each year. This, of course, would be detrimental to pupils who remain in the annex for a longer period than one year. On the other hand, if the poorer teachers are usually assigned to work in the annexes, the teaching must be inferior to that in the main building. Even though these less efficient teachers would be in the main building if there were no annexes, their relative number in the annex is larger than their number among the teachers in the main building. In other words, a pupil comes under the instruction of a larger number of less effective teachers in the annexes than he would if all pupils and teachers were in the main building.

(c) The amount of work done. The teachers in the annexes have more periods of teaching and study hall supervision than teachers in the main buildings.

Table XXIV shows the relative amount of teaching and study hall supervision done by teachers in the departments of English, German, mathematics, biology and history, in the main buildings and in the annexes in the high schools of New York City. (Table XXIV is on p. 159.)

The line drawn through the table horizontally, passing through the most frequent average number of periods of teaching and study hall supervision in the case of the main buildings and the annexes, shows that the teachers in the annexes are doing the larger amount of this work.

If the facts in Table XXIV be tabulated in a different form, this conclusion is reinforced. The following is a comparison of the average number of periods of work most frequently done by teachers in the main building and annexes, arranged by subjects:

	In Main Buildings.	In Annexes.
In English.....	24.0	27.0
" German	25.5	27.0
" Mathematics	25.5	27.5
" Biology	25.5	25.0
" History	24.5	Not offered

In every case, except biology, the amount of work carried by teachers is larger in the annex than in the main building. It should be further pointed out that 65.47 per cent. of the teachers in the annexes are carry-

Table XXIV
Number of Teachers

Average No. of Periods of Teaching plus Study-Hall Supervision	Main Buildings						Annexes			
	English	German	Mathematics ^{x1}	Biology ^{x2}	History ^{x2}	English ^{x2}	German	Mathematics	Biology	^{x4}
	a b	a b	a b	a b	a b	a b	a b	a b	a b	x
140			1 ✓	1 ✓						
165				4 ✓						
180			2 ✓							
175				2 x	4 ✓					
170										
195	5 ✓									
200										
205	2 ✓									
210										
213										
220				12 ✓	2 ✓			1 ✓		
225	22 ✓		4 ✓							
230	1 0	1 0	3 ✓		1 0		1 0	7 ✓	1 0	
235	3 ✓		15 ✓		11 ✓					
240	17 ✓	5 ✓		4 0	5 ✓		2 ✓	2 ✓		
245	40 ✓	1 ✓		3 ✓	40 0					
250	28 0	30 0	31 0	2 ✓	2 ✓	8 ✓	6 0		20 ✓	
255		42 0	48 0	16 0		10 ✓				
260			22 ✓	2 0		4 ✓			1 ✓	
265										
270			9 0		2 ✓	12 ✓	11 ✓			
275				6 0						
280	2 0	11 0	7 ✓							
285	4 0	2 ✓			5 ✓					
290	1 0	1 ✓			1 0					
295										
300	1 0			2 ✓					3 ✓	
305		2 0								
310										
315	1 0									
320	1 0									
325										
330	1 0									
335	1 0									
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865	1 0									
870	1 0									
875	1 0									
880	1 0									
885	1 0									
890	1 0									
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905	1 0									
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925	1 0									
930	1 0									
935	1 0									
940	1 0									
945	1 0									
950	1 0									
955	1 0									
960	1 0									
965	1 0									
970	1 0									
975	1 0									
980	1 0									
985	1 0									
990	1 0									
995	1 0									
1000	1 0									

x = No data.

x¹ = 1 additional teacher with 4 periods.

x² = 1 additional teacher with 7 periods.

x³ = 1 additional teacher with 34 periods.

x⁴ = No history in annexes.

For an explanation of the method of preparing Table XXIV, see the footnote at the bottom of p. 106.

Table XXV

Table to Show the Size of Sections in German

Size of Sections, No. of Sections																								
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Main Buildings	33	4	12	2	5	4	5	6	9	12	11	6	7	13	22	25	23	19	20	30	26	22	28	29
Annexes	12	2	3	2	5	4	5	6	9	12	11	6	7	13	22	25	23	19	20	30	26	22	28	29
Totals	45	6	12	2	3	2	6	7	5	6	9	13	12	6	4	7	16	27	28	32	36	29	28	32
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

* One section with 6 pupils

" " " 5 "

Four sections " 7 " each

ing more than twenty-five periods of work per week. In addition to teaching and study hall supervision, a large majority of teachers also have, like the teachers in the main building, "other assigned duties."

(d) Size of sections. A study of the size of sections¹ in the main building and in the annexes shows that they are much larger in the annexes, as shown by the accompanying table. (Table XXV is on page 160.)

The sections in the main building are divided in two (approximately) equal parts by the line between thirty and thirty-one; in the annexes between thirty-five and thirty-six.

Among the different annexes, the terms of work covered vary from two to six. The above comparison is made between the size of sections in the eight terms in all schools, and the size of sections in all terms in the annexes (be they two or more). But the same general statement is true if the main school be compared with the annex term by term. For example, the first term sections in the main building are divided into two approximately equal parts between "35" and "36" in the scale at the top of the table, while in the same term, sections in the annexes are divided between "37" and "38." This size of section is partially determined by the size of room in the annexes, the rooms in the elementary school buildings being larger than the rooms in the high school buildings, and partially by the fact that relatively fewer teachers are employed.

(e) Changes among pupils. There is greater fluctuation in the number of pupils in the annexes than in the main buildings. The fluctuation is caused largely by the number of pupils who drop out of school, but those who only drop out of a subject are also included. The fluctuations in English are typical.

Table XXVI shows the number of pupils taking English in the first term in the main buildings and the annexes, in the schools indicated, and the fluctuations in each.

Table XXVI—Pupils Taking First Term English

<i>Main Buildings (Per Cent. of Loss 8.0)</i>		
Wadleigh	419	— 54
Morris	527	— 35
Erasmus Hall.....	563	+ 1
Manual Training.....	552	— 62
Eastern District.....	405	— 48
Totals.....	2,466	198
<i>Annexes (Per Cent. of Loss 11.6)</i>		
Wadleigh	293	— 26
Morris	245	+ 9
Erasmus Hall.....	137	— 16
Manual Training.....	195	— 35
Eastern District.....	69	— 20
Manual Training.....	300	— 41
Eastern District.....	186	— 34
Totals.....	354	— 44
Totals.....	1,779	207

¹The chart showing the facts collected for this study is too large to be inserted here. It has been filed with the Committee on School Inquiry.

From the preceding table it will be observed that of the 2,466 pupils in first term of English in the high schools indicated, 198, or 8 per cent., dropped the English work; in the annexes, of the 1,779 pupils in the same term of English 207 pupils, or 11.6 per cent., dropped the English work.

Table XXVII shows the number of pupils taking English in the second term in the main buildings and in the annexes, and the fluctuations in each.

Table XXVII—Pupils Taking Second Term English

<i>Main Buildings (Per Cent. of Loss 9.6)</i>		
Wadleigh	265	— 9
Morris	182	— 28
Boys'	57	— 2
Erasmus Hall	376	— 49
Manual Training	372	— 34
Eastern District	256	— 23
Totals	1,508	145
<i>Annexes (Per Cent. of Loss 15.5)</i>		
Wadleigh	161	— 13
Girls'	229	— 35
Boys'	54	— 6
Boys'	105	— 17
Erasmus Hall	132	— 9
Erasmus Hall	130	— 29
Manual Training	65	— 12
Manual Training	147	— 10
Manual Training	98	— 19
Eastern District	231	— 59
Totals	1,352	209

Of the 1,508 pupils in the second term of English in the main buildings, 145 dropped out, or 9.6 per cent.; of the 1,352 pupils in second term in the annexes, 209 dropped out, or 15.5 per cent.

What is true of pupils in English is true of pupils in other subjects, namely, that the temporary conditions surrounding the annex are conducive to pupils leaving school.

d. *Other important considerations.* (a) The department in the main building from which the first assistant is taken is deprived of the services of a first assistant as director because no first assistant is appointed in his place. The result is that an assistant teacher is temporarily put in charge of the department, which arrangement may or may not be satisfactory, depending upon the ability of the assistant teacher.

(b) The first assistant in the main building, as chairman of his department, is responsible for the supervision and direction of the work of his department in the annexes. Inasmuch as the annexes are, in some cases, long distances from the main building (over twelve miles from Curtis High School), it is obvious that the first assistant cannot properly supervise the work of the teachers in his department in the annexes.

(c) In view of the small number of sections (classes) in any given study in the annex, it is usually necessary for a teacher to teach subjects other than those for which he is licensed. This means that the teacher of mathematics may be called upon to teach biology and English. We have been informed that in one annex, for example, there is not a single teacher of mathematics, all of the mathematics work being "farmed out" to teachers in other departments.

(d) There is no school spirit in the annex such as there is in the main building. Teachers, in general, dislike to work in the annex and pupils, also, object to attending the annex. Cases have been called to our attention of pupils traveling long distances by trolley in order to attend the main school when the annex was at their very door.

(e) In general, pupils and parents have a right to the advice and counsel of the principal of the school, rather than the advice and counsel of the "teacher-in-charge," no matter how effective he may be in his work.

(f) Usually, only one language is offered in the annex, so that a pupil in the annex does not have the same opportunity to elect from three languages that pupils in the main building have.

(g) In some cases (Morris High school, for example), all of the commercial work is given in the annexes, so that all pupils who take the three-year commercial course have to go to the annex, even though they may live much nearer the main building. This means, also, that no commercial electives are available to pupils in the general course in the main building.

(h) From the standpoint of the school as a whole, the sections could be much more effectively organized in any subject if the pupils in the annexes and in the main building could be merged. For example, suppose there were forty-five pupils in second term work in the annex, and seventy-five pupils in the same term of work in the same subjects in the main building; it is clear that there must be two sections in the annex and there ought to be three sections in the main building. If these 120 pupils were in the same building, they could be grouped into four sections of normal size, instead of five small sections, or three or four sections, of which some must be altogether too large. By this grouping into four sections, one section could be eliminated and one-fifth of the work of a teacher could be saved.

At best, the annex should be considered an undesirable temporary expedient. The teaching is likely to be inferior; the teachers change often, and are called upon to do a relatively large amount of teaching as compared with teachers in the main building; the work cannot be made as effective in the annex because the equipment is usually not as good; the supervision is not as effective; the sections (classes) are larger; the educational offering is more limited, and, finally, conditions generally militate against successful work.

In addition, while the annex may serve a purpose as a temporary

expedient, it defeats its own purpose as a permanent part of a high school system. If allowed to persist, it becomes a means of increasing, rather than decreasing, congestion in the main building. For instance, a regular high school building is built to accommodate a given number of pupils, distributed through a four year course. Through a steady increase in attendance, more pupils apply for admission to the first year class in this school than can be accommodated. The Board of Superintendents then recommends the opening of an annex to take some of the first year pupils, and designate it an annex of this school. The work is usually extended over two terms (one year) of work, or more, after completing which pupils are transferred to the main building. In the meantime, the attendance in the main building has been at the maximum capacity of the building. The inevitable result is that the pupils, when transferred from the annex, become a direct cause of congestion, and, in most cases, the cause of very serious administrative difficulties in the main building. When from one to three or four annexes, from term to term, pour pupils into the second or third year of the course in the main building, the annex is a direct cause of, rather than a relief for, crowded and unsatisfactory conditions in a school.

The annex should, therefore, be regarded only as an undesirable temporary means of caring for a group of pupils until an additional high school can be organized, and suitable buildings built.

In spite of these unfavorable conditions, the annex has already become altogether too permanent an institution in secondary education in New York City. Only adequate accommodations for high school pupils will enable the city to get rid of annexes. Steps should be taken at once to provide more high school buildings.

(3) Our Recommendations

A. We heartily endorse Superintendent Maxwell's recommendation in his report of 1909, p. 112, "that hereafter no high school be erected to accommodate more than 1,500 students." The same recommendation has been made more than once by Superintendent Maxwell, and similar recommendations have been made by Associate City Superintendent Stevens.¹ High school principals testify unanimously that the present schools are much too large; and that 1,500 pupils should be the maximum

¹ "I think all will agree that many of our high schools, regarded as units of organization, are too large. We place the immediate direction in the hands of a principal; we impose on him responsibility; we require him to master the details of administration; we expect him to study the needs and capacities of each pupil; we direct him to supervise the work of his teachers and to aid and correct those who are weak or unsuccessful. With a registration of more than one thousand pupils this is impossible. If each of our high school organizations could be held to this maximum, it would be possible to do more for the individual pupil and to regulate the work of new and inexperienced teachers."—Associate City Superintendent Edward L. Stevens, in Ninth Annual Report of the City Superintendent of Schools, of the City of New York, for the year ending July 31, 1907, page 247.

for one school. This size is satisfactory educationally, because the principal and the teachers can give more direct attention to the individual pupils of the school, and, hence, they can increase the efficiency of the school work. It is satisfactory economically, because a school of 1,500 pupils is large enough for an effective, economic organization.

The most common argument that has been advanced against the establishment of smaller schools and more of them, instead of the present practice of establishing a few schools of enormous size, is the cost of school sites. This argument has little force. The cost of a school site is always a relative matter, inasmuch as the high cost of a site in any city indicates that the property in the vicinity, or in the city as a whole, is likewise high. To put it briefly, expensive school sites mean a high valuation of property which is able to bear the expense. The City of New York is just as able to purchase as many school sites as it needs as is any city in the country.

B. We recommend that a definite policy be adopted of establishing high schools in various boroughs of the city to replace the annexes. As an illustration, the Borough of The Bronx has only one high school, which is so over-crowded that there are pupils on part time in the main school, and there are 751 pupils in two annexes which are occupying rooms which are as badly needed for elementary school work.

C. We recommend, also, that a plan be adopted of establishing the different types of specialized high schools throughout the city as a basis for studying their effectiveness. We have already pointed out that, everything considered, a school with a single purpose can be more effectively organized, and can carry out its purpose more satisfactorily than a school which undertakes to accomplish two or three distinct purposes. The reason for providing three curricula within a given high school, such as Bryant, is that the three different types of education may be made more easily available to the 1,000 pupils in the school. If, however, the Board of Education should adopt a policy, such as we recommend, of limiting the size of high school to 1,500 pupils, and, further, if these schools of different types should be located throughout the city in such a way as to make them as accessible as possible to the pupils who will attend them, then the need of having more than one curriculum in a given high school will not be as great as it is at the present time.

Further, the new high schools are needed in those parts of the city where sites are not as expensive as they are in Manhattan. The Board of Education should also adopt a policy of anticipating high school needs by securing sites at advantageous times.

Effectiveness and availability of instruction, and effectiveness of administration require that schools be limited in size, that schools be established to take the place of annexes, and that different types of specialized high schools (recommended page 176) be properly distributed throughout the city. Such a plan would result in making education more available to the high school population, would increase the effectiveness of that

education, and would remove some of the problems of administration in the large schools.

3. The Size and Number of Class Rooms

(1) Small and Large Sections a Consequence

The effectiveness of the organization of a high school is directly affected by the size and number of class rooms available for recitation purposes. The size and number of class rooms are at present responsible for some of the small sections found in the high schools. Small rooms, which were never intended for class room purposes, are being used to help to accommodate the constantly increasing register. On the other hand, large rooms in the elementary school buildings, and also in the main buildings, account for many of the large sections. It is inevitable that, wherever large rooms are available, they will be filled whenever the attendance increases beyond the intended working capacity of the school.

(2) Relation to the Number of Teachers

The above has a direct bearing upon the amount of teaching to be done, and the number of teachers it takes to care for a given number of pupils, and, hence, the cost of instruction. For example: Erasmus Hall High School had seven teachers to teach 765 pupils in the Department of German in the spring term of 1911, or an average of 109.2 pupils per teacher. DeWitt Clinton High School had only seven and four-fifths teachers to teach 1,135 pupils during the same term, or an average of 145.5 pupils per teacher. For the Department of Education to say that the larger number of teachers in the Erasmus Hall High School is required because small classrooms must be used is not a satisfactory answer, because it is one of the functions of the Board of Education to provide adequate class rooms. Hence, if the rooms used would not accommodate a full-sized class, it is pertinent to ask why such conditions have not been anticipated and a way provided to avoid them.

(3) A False Economy

It is a defensible thesis that whenever a teacher teaches a group of pupils half the size of a regular class, due to a lack of adequate class rooms, that teacher is not rendering adequate return to the city for the money expended. The work of a teacher of a class of fifteen pupils in a small room is only one-half as productive as it should be, because it reaches only half as many pupils as it should. It is a false economy (whether practiced by the Department of Education, or by the Board of Estimate and Apportionment), to force the use of inadequate class rooms by not providing sufficient class rooms of the proper size. It

CHANGE IN ORGANIZATION IN HIGH SCHOOL OR IN TRAINING SCHOOL (Theory Department)

To be used when the number of teachers of any rank or subject is to be increased or decreased.

DEPARTMENT OF EDUCATION
THE CITY OF NEW YORK

School

Borough of

191

To the Board of Superintendents:

increase the number of positions in this school, as follows:
Application is hereby made to decrease

POSITIONS TO BE INCREASED OR DECREASED

First Assistant			Assistant Teacher			Junior Teacher		Laboratory Assistant		Library Assistant		Clerical Assistant		Critic Teacher		Total		
From	To	Subject	From	To	Subject	From	To	Subject	From	To	From	To	From	To	From	To	From	To

(Give sex of new teachers needed)

NOTE: The full number of duly authorized positions of each rank must be given in making out this application, whether such positions are held by regular teachers or by substitutes or are entirely vacant.

Total register of the school.....

Average number of pupils per teacher, including each rank except principal, library assistant, and clerical assistant. (In training school do not include teachers of the model department.).....

Number of pupils to be instructed on19, in the subjects for which new teachers are needed, and the present number of teachers (including vacancies) of such subjects.

Subject	No. Pupils	No. Teachers (give rank)	Subject	No. Pupils	No. Teachers (give rank)

ADDITIONAL REASONS FOR REQUEST

Principal.

REMARKS AND RECOMMENDATIONS OF SUPERINTENDENTS

19

District Superintendent.

19

Associate City Superintendent.

creates a necessity of providing teachers otherwise unnecessary, and the educational returns from such teachers are not commensurate with their cost.

(4) Recommendations

A. Limit the seating capacity of class rooms. One of the most successful ways to prevent the formation of over-size sections is to limit the seating capacity of class rooms to the maximum (or a little more than the maximum) standard size of section. In no other way can the temptation be so successfully resisted of filling every available room, no matter how large it is. This is a matter for the Department of Education and the school architect to consider.

B. Provide special study halls. It is important to consider the matter of study halls in connection with the number of available class rooms. In Wadleigh and Erasmus Hall High Schools, for example, there are regular study halls, seating from 125 to 150 or more pupils. Each hall is in charge of one teacher each period of the day. Our study of the work of teachers shows that chairmen of departments give an average of two periods per week to study hall supervision, and teachers an average of 3.16 periods per week. Thus the present practice of supervising from twenty-five to forty pupils studying in regular class rooms, consumes over 12 per cent. of the time of the teachers. This time could be reduced by 75 per cent. if study halls were provided, so that one teacher (or possibly two) could supervise from 125 to 150 pupils, instead of only twenty-five to forty, leaving other teachers free to teach or to perform other services. With study halls, the amount of time required of teachers to supervise study would be reduced, and more class rooms would be available for recitation purposes. This is another matter to which the Department of Education and the school architect can profitably give attention.

C. Provide more class rooms. The obvious way to overcome the lack of adequate class rooms is to provide more buildings, with class rooms enough to accommodate the pupils.

4. The Number of Teachers Employed

(1) Fundamentally and Directly Affects Organization

The most important factor in determining effective high school organization is the number of teachers employed in the various departments of study. This statement is so obvious as to require no argument. As the number of teachers is increased, the number of sections can be increased, and the over-size sections reduced. On the other hand, if the number of teachers remains the same, and the number of pupils increases, the number of pupils per section must be increased.

Further, the appointment of teachers is comparatively the easiest,

quickest, and most effective method of improving the organization of a school. Changes in the curriculum, in the size of the school, and the number of class rooms available are factors affecting the organization of the school, which cannot be changed at will; they are the result of deliberation and planning—in fact, the result of a policy—and can be changed only by a change in general policy. The appointment of teachers is a continual administrative function (and changes in curricula should be). But the building of school buildings is a matter of policy. It should be the result of a well-conceived plan which should anticipate future needs. This being so, teachers should be appointed to serve not only normal needs (i. e., when the size of school, the program of studies, and the size and number of class rooms are satisfactory), but also to offset, as far as possible, unsatisfactory conditions affecting organization. In other words, these controlling factors must all be taken into consideration when any one of them is at issue, to the end that the most effective organization that the conditions permit may result.

(2) The Method of Appointment

The method of estimating the need of high school teachers for budget purposes has been discussed in another part of this report (see p. 181). We are here concerned with the procedure by which these teachers are appointed after they have been provided for in the budget. New teaching positions are established by the Board of Superintendents upon the recommendation of the Associate City Superintendent in charge of high schools. His recommendation is based upon applications for additional teachers, made by high school principals, and addressed to the Board of Superintendents. On the other hand, the same procedure is followed in case a principal declares "teachers in excess." In no other single way does the action of the Associate City Superintendent so directly affect the internal organization of each school.

A. The Method Now in Use Is Inadequate

The blank on which the principal makes application, and on which are the recorded facts on which the Associate City Superintendent bases his recommendation to the Board of Superintendents, is on page 166a.

a. The important items on this blank are:

1. The number of "positions to be increased or decreased," classified by rank and sex of teachers, and subject to be taught.
2. "Total register of the school."
3. "Average number of pupils per teacher, including each rank, except principal, library assistant, and clerical assistant."

4. "Number of pupils to be instructed on (date), in the subjects for which new teachers are needed, and the present number of teachers (including vacancies) of such subjects."

This information is inadequate for the purpose to be served. A study of the blank will show that there are two items which apparently are considered a satisfactory basis for determining whether a decrease or an increase in the number of teachers in a given high school is desirable, viz., (a) "the average number of pupils per teacher" for the school as a whole, found by dividing the "total register of the school" by the number of teachers employed, exclusive of the principal, library and clerical assistants; and (b) the average number of pupils per teacher in the department in which the change in organization is proposed. This average (which is not given, but is implied in the blank) is found by dividing the number of pupils by the number of teachers in the department in which the change is proposed. Let us consider each of these items in turn.

(a) "*Average number of pupils per teacher*" for the school as a whole. Such a figure as the "average number of pupils per teacher" in a given high school cannot show whether new teachers¹ are needed because, as has been shown elsewhere,² this "average" legitimately varies greatly among different schools, and also varies from term to term in the same school. Therefore, it cannot constitute a satisfactory standard for determining whether additional teachers are necessary or justifiable in a given school. A standard must be a measure which is constantly, and approximately, attainable in all schools, or it cannot be a satisfactory standard for passing judgment on the practice or conditions in a system of high schools. The "average number of pupils per teacher" for the school as a whole is not such a standard.

(b) *The average number of pupils per teacher by departments in a school.* The numbers on which this average is based are really the first essential items which should constitute a recorded basis for the principal's request for, and the Associate City Superintendent's approval of, additional teachers for a department of study in a high school. It is important to know how many pupils there are in the department, and how many teachers there are to teach them, to indicate the size of the problem which confronts the school authorities to provide instruction in that department in a given school. But this is only the most general information, and neither these figures nor the average derived from them, really furnish the necessary information for passing judgment on the need of additional teachers. Neither figures can be considered a satis-

¹ In this discussion, we shall consider the case of new teachers only, although the case of "teachers in excess" would be handled in the same way.

² See p. 181 of this report on "Estimating the Need of High School Teachers."

factory standard for passing judgment, because the schools cannot approximate any uniform standard for the city as a whole, as shown by the following table.

Table XXVIII shows the number of pupils taking German, the number of teachers of German, and the average number of pupils per teacher in German in all the high schools.

Table XXVIII

High Schools.	Pupils.	Teachers.	Average.
DeWitt Clinton.....	1,135	7 $\frac{1}{2}$	145.5
High School of Commerce.....	1,119	6	186.5
Stuyvesant.....	1,384	9 $\frac{1}{2}$	144.2
Wadleigh.....	719	7	102.7
Washington Irving.....	2,619	15 $\frac{1}{2}$	172.3
Morris.....	1,793	12	149.4
Girls'.....	1,274	9 $\frac{1}{2}$	138.5
Boys'.....	833	6 $\frac{1}{2}$	122.5
Erasmus Hall.....	765	7	109.3
Manual Training.....	1,972	14	140.8
Commercial.....	1,781	10	178.1
Eastern District.....	1,547	10	154.7
Bushwick.....	741	5	148.2
Bryant.....	497	3	165.7
Newtown.....	492	3	164.0
Hudson.....	340	2 $\frac{1}{2}$	121.4
Far Rockaway.....	149	1 $\frac{1}{2}$	124.2
Jamaica.....	525	4 $\frac{1}{2}$	125.0
Richmond Hill.....	539	4 $\frac{1}{2}$	128.3
Curtis.....	444	4	111.0

In the cases of Manual Training, Bushwick, and Curtis High Schools, the figures include the pupils taking French. In such cases, of course, the number of teachers teaching French are included.

The data for this table were taken from the "Program of Daily Recitation" sheets furnished the Department of Education by the high school principals for the February-June term, 1911. The figures are for the main building and the annexes combined, as far as the data concerning the annexes were interpretable.

This table shows great variation in the average number of pupils taught by a teacher of German in the different high schools of the city. This variation ranges from an average of 186.5 pupils per teacher in High School of Commerce, to 102.7 pupils per teacher in Wadleigh High School. If there is a standard number of pupils for each teacher of German in the high schools of New York city this table certainly does not reveal it, because, rather than showing even approximate uniformity, it shows great diversity.¹ This diversity is partially inevitable and justifiable, and, hence, on that account, a standard "average number of pupils per teacher" for a department of study cannot be approximately maintained for all the high schools of the city. Consequently, the average number of pupils per teacher in a department cannot be a satisfac-

¹ See p. 183 on "Estimating the Need of High School Teachers" for a discussion of the conditions which make this diversity inevitable and justifiable.

tory basis for estimating the need of additional teachers in that department in any given high school.

Further, if we classify the high schools according to the total number of pupils taking German we find the same variation that was found among the schools of the city taken as a whole. In those schools with 500 or less pupils in German, the variation in the average number of pupils per teacher is from 111.0 in Curtis High School to 165.7 in Bryant High School, as follows:

	No. of Pupils.	No. of Teachers.	Average.
Far Rockaway.....	149	1 $\frac{1}{2}$	124.2
Flushing	340	2 $\frac{1}{2}$	121.4
Curtis	444	4	111.0
Newtown	492	3	164.0
Bryant	497	3	165.7

In those schools with from 500 to 1,000 pupils in German, the variation in the average number of pupils per teacher is from 102.7 in Wadleigh High School to 148.2 in Bushwick High School, as follows:

	No. of Pupils.	No. of Teachers.	Average.
Jamaica	525	4 $\frac{1}{2}$	125.0
Richmond Hill.....	539	4 $\frac{1}{2}$	128.3
Wadleigh	719	7	102.7
Bushwick	741	5	148.2
Erasmus Hall	765	7	109.3
Boys'	833	6 $\frac{1}{2}$	122.5

In those schools with 1,000 to 1,500 pupils in German, the variation in the average number of pupils per teacher is from 138.5 in Girls' High School to 186.5 in the High School of Commerce, as follows:

	No. of Pupils.	No. of Teachers.	Average.
High School of Commerce.....	1,119	6	186.5
DeWitt Clinton.....	1,135	7 $\frac{1}{2}$	145.5
Girls'	1,274	9 $\frac{1}{2}$	138.5
Stuyvesant	1,384	9 $\frac{3}{4}$	144.2

In those schools with 1,500 to 2,500 pupils in German, the variation in the average number of pupils per teacher is from 149.4 in Morris High School to 178.1 in Commercial High School, as follows:

	No. of Pupils.	No. of Teachers.	Average.
Eastern District.....	1,547	10	154.7
Commercial	1,781	10	178.1
Morris	1,793	12	149.4
Manual Training.....	1,972	14	140.8
Washington Irving.....	2,619	15 $\frac{1}{2}$	172.3

We conclude, therefore, that a standard "average number of pupils per teacher" for a department of study cannot be approximately main-

tained either for the high schools of the city, irrespective of size, or for schools with approximately the same number of pupils in that department. The conclusion is, therefore, reinforced, that the need of additional teachers in each school must be judged according to its own peculiar conditions, and not according to any "average number of pupils per teacher."

B. What the Blank Should Contain—Recommendations

The essential facts to determine the need of additional teachers in a department of study are these:

- a. Concerning the size of sections:
 - (a) How many pupils are there in the department, and how are they distributed by terms of work pursued?
 - (b) What is the number and size of sections by terms of work, as organized at the time of the application?
 - (c) Is the size of sections, as organized, in harmony with the standards fixed by the Board of Superintendents?
- b. Concerning the amount of teaching:
 - (a) How many periods of teaching and other work are teachers already employed in the department doing?
 - (b) How much teaching and other work is there for the additional teacher or teachers to do?
 - (c) Is the number of periods of teaching now being done by teachers in the department in harmony with the standards fixed by the Board of Superintendents?

As has been stated (p. 72), the size of section is important educationally and economically. The size of section and the amount of teaching to be done are inseparably connected. The method, therefore, of determining the desirability or necessity of an increase or a decrease in the number of teachers in a department in any high school must incorporate as essential data the size of section and the amount of teaching which teachers already employed are doing. If the size of sections in a given department is larger than the standard size of section, it is obvious that additional sections should be formed, thus increasing the amount of teaching to be done. An increase in the amount of teaching to be done would necessitate an increase in the number of teachers to do it, provided the teachers already employed were doing the standard amount of teaching and other work. It is necessary to know, therefore, the amount of work which teachers already employed are doing before additional teachers can wisely be asked for by the principals, or judiciously recommended by the Associate City Superintendent. If the teachers already employed are teaching the standard amount of work obviously any

increase in the number of sections must be cared for by additional teachers. If teachers are teaching more than the standard number of periods, and it is necessary to reduce that amount of work, clearly it can only be done by the employment of additional teachers.

If abnormal conditions, affecting the size of section and, consequently, the number of teachers needed, exist in a school, a statement of these facts should be added to the information already indicated as essential before the desirability of a change in the number of teachers will be apparent. Therefore, the principal of the high school, in making application for an increase in the number of teachers in a given department, should furnish the above information, and a statement of the unusual conditions affecting the work of the department.

With this information as a basis, the Associate City Superintendent in charge of high schools is in a position to approve or disapprove intelligently the application. All of this information which the principal furnishes, should be presented in a written report to the Board of Superintendents, accompanied by the approval or disapproval of the Associate City Superintendent. If the foregoing data were the basis of the decision to increase or decrease the number of teachers in a department of study, teachers would be provided where they are actually needed to maintain both the standard size of section and the standard number of periods of teaching per week per teacher. On the other hand, teachers would be declared in excess in certain departments of study where now there is apparently enough work for teachers to do; but only apparently, because the size of section is below the standard, thereby making sections enough so that the resulting amount of work makes necessary the present number of teachers. Hence, we recommend the adoption of a blank which shall incorporate the essential data by which the need of additional teachers can be shown. Only when such a blank is used will it be certain that teachers are provided where they are actually needed, and declared "in excess" where they are not needed.

C. Summary of Findings and Recommendations

Summary of our findings and recommendations by topics:

A. The Principal's Responsibility for the Daily Program

We find:

1. That the principals are responsible for the organization of recitation sections in their respective schools.
2. That some of the principals have organized large and small sections in the same term of work, each of which could have been avoided by a different distribution of pupils.
3. That the effective organization of the schools, as to number and size of sections, by the principals is directly affected by factors controlled by the Department of Education.

4. That these factors are the program ("course") of studies, the size of school, the size and number of class rooms, and the number of teachers employed.

We recommend:

That a thoroughgoing investigation be undertaken of program-making by the principals. This investigation should be made by a committee of high school principals and a committee of the Board of Superintendents working together.

B. The Department of Education's Responsibility for

I. The Program of Studies

We raise these questions:

- (1) Has the Board of Superintendents considered the extent to which the larger number of curricula ("general," "commercial," "manual training," ".") in a school increases the number of small sections, and, hence, increases the amount of teaching to be done to care for a given number of pupils?
- (2) Has the Board of Superintendents considered to what extent, if any, the number of electives in a curriculum increases the cost of instruction, and whether the increased cost, if any, produces commensurate educational returns?
- (3) Has the Board of Superintendents followed any well conceived plan in determining the time allotments for high school subjects? Has it considered the daily program of the school in determining time allotments?

We recommend:

- (1) That each question raised above be the subject of an investigation by the Board of Superintendents in order to determine—
 - a. Whether, educationally and economically, there should be a single curriculum or several curricula in one high school.
 - b. Whether the number of "electives" increases the cost of instruction and, if so, whether the educational results are commensurate with the increased cost.
 - c. A plan for assigning time allotments to subjects which shall take into consideration not only the educational value of each subject, but also whether it admits of making a satisfactory daily program.

- (2) That the courses of study and curricula be subjected to continual but gradual revision and modification by committees of high school principals and teachers, and corresponding committees of the Board of Superintendents working together.

2. The Size of the High Schools

We find:

- (1) That the high schools in New York City, in most cases, are so large that (a) it is doubtful whether the principal can discharge satisfactorily his responsibility to pupils, parents, and teachers; (b) that their very size interferes with their effective administration, and (c) that an assembly of all students at one time is impossible, and general facilities, such as lunch rooms, lockers, etc., cannot be adequately provided.
- (2) That the system of annexes is unsatisfactory, because, among other reasons,
 - a. The opinion prevails that the teachers are inferior to those in the main building.
 - b. The teachers change often.
 - c. The teachers do relatively more teaching than in the main building, and often teach subjects other than those which they are licensed to teach.
 - d. The sections are too large, being considerably larger than sections in the main building.
 - e. The students drop out faster than in the main building.
 - f. The educational offering is not equivalent to the offering in the main building.
 - g. School spirit is lacking; teachers and pupils both prefer the main school.
 - h. The organization of the school as a whole cannot be as effective with annexes as it could be if all pupils were in one building.

We recommend:

- (1) That high schools hereafter established be limited to 1,500 pupils.
- (2) That a definite policy be adopted of establishing high schools in various parts of the city to take the place of annexes, and that additional high schools be established in accordance with that policy.

- (3) That a plan be adopted of establishing the different types (specialized and cosmopolitan, particularly the former) of high schools throughout the city, and that a careful study of their comparative effectiveness be made from year to year.

3. The Size and Number of Class Rooms

We find:

- (1) That some small sections are the result of the principals being forced to use small rooms in the main building.
- (2) That some large sections are the result of the principals being forced to use large rooms, particularly in annexes; some are also the result of filling class rooms in the main building to over-flowing on account of congested conditions.
- (3) That small sections mean expensive instruction, because the teaching reaches a comparatively small number of students.
- (4) That large sections often mean ineffective instruction, because the number of pupils a teacher can satisfactorily teach is limited.

We recommend:

- (1) That the seating capacity of class rooms be limited to the maximum standard size of section to make over-size sections impossible.
- (2) That in the new buildings constructed, and, as far as practicable in the buildings now in use, special study halls, seating 125 to 150 pupils, be provided, so that less time of teachers would be required in study hall supervision, and regular class rooms could be used more largely for recitation purposes.
- (3) That more class rooms be provided through the building of more high schools.

4. The Number of Teachers Employed

We find:

- (1) That the method of increasing or decreasing the number of teachers in a department of study does not insure the appointment of teachers where they are needed.
- (2) Nor does it insure the declaring of teachers "in excess" where they are not needed.
- (3) That, in many schools, there is not a sufficient number of teachers to maintain the standard size of section and the

standard week's work for a teacher fixed by the Board of Superintendents.

- (4) That, in some schools, there are more teachers than would have been necessary had the size of section not been abnormally small.
- (5) That the blank now used in the reorganization above noted is inadequate for its purpose.

We recommend :

- (1) That a reorganization blank be adopted which shall furnish the following essential facts, on which the need of changing the number of teachers in a department is based.

A. Concerning the size of sections :

- a. How many pupils are there in the department, and how are they distributed by terms of work pursued?
- b. What is the number and size of sections by terms of work, as organized at the time of the application?
- c. Is the size of sections, as organized, in accordance with the standards fixed by the Board of Superintendents?

B. Concerning the amount of teaching :

- a. How many periods of teaching and other work are teachers already employed in the department doing?
- b. How much teaching and other work is there for the additional teacher or teachers to do?
- c. Is the number of periods of teaching now being done by teachers in the department in accord with the standard fixed by the Board of Superintendents?



(V) ESTIMATING THE NEED OF HIGH SCHOOL TEACHERS

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(V) ESTIMATING THE NEED OF HIGH SCHOOL TEACHERS¹

Estimating the need of high school teachers is of fundamental importance, educationally and economically. If there are not enough teachers to carry on the work of a school according to sound educational principles, ineffective instruction results. Lack of a sufficient number of teachers means over-size classes, or over-worked teachers, or both—all of which is at the expense of the pupil's education. On the other hand, too many teachers, or ineffective use of teachers, results in a loss to the city, because the educational returns are not commensurate with the financial expenditures.

In the preparation of a budget blank for estimating the need of high school teachers² we have proceeded on the assumption that, if the Board of Estimate and Apportionment is to discharge wisely its function of granting, or refusing to grant, funds for the employment of additional teachers, that board must have the facts upon which to base a judgment on the need of such expenditures as the principals' estimates require. Hence, a satisfactory budget blank must contain the essential information upon which the principal bases his estimates as a basis upon which the Board of Estimate and Apportionment may judge the validity of those estimates.

I. What Information is Necessary?

The budget blank for estimating the need of high school teachers should answer the following questions for each school:

- I. What is the present trend in the number of pupils in the high school as shown by past experience and present conditions?

¹Our study of the method of estimating the need of high school teachers by the principals is a natural outcome of our study of the size of sections and the work of teachers. It is not only an important problem of internal organization and general administration of the schools, but it is also an equally important budget problem.

²We have made a study of the possible use of substitutes in the high school as a means of reducing the over-size sections in first and second terms, thereby making it possible to maintain a more satisfactory size of section throughout the term. We found that even though there were many "discharges" in these two terms, and many of them during the first month or six weeks of the term, the discharges from the classes (sections) in the different subjects was too irregular to make it possible to disband even one section in each of the four subjects taken by a first or second term pupil. Hence, we cannot recommend the use of substitutes as a means of reducing over-size sections at the beginning of the term. The data on which this conclusion is based have been filed with the Committee on School Inquiry.

It is essential to establish an annual per cent. of increase or decrease in the number of pupils in the school, in order to provide the basis for a satisfactory estimate of the number of prospective pupils to be cared for. The period of time for which data are tabulated should be long enough to show a regular development, and not a temporary condition.

2. In what departments of study, and in what terms of work, were these pupils distributed in the past, and how many teachers were employed to teach them?

This information will provide the basis of the estimate of the prospective number of pupils in the various departments of study, and how they will be distributed by terms, and, hence, will show by departments and terms the probable amount of teaching to be done. But past experience may contain practices which should not be perpetuated. Hence, additional information is necessary to estimate the need of high school teachers.

3. Does the present organization of the school show that the size of sections and the amount of work teachers are doing are in accordance with the standards fixed by the Board of Superintendents?

The data relating to the present organization of the school will show whether the principal has organized his school according to the standards fixed by the Board of Superintendents, and whether he has made the best possible use of the teachers already employed in his school. These data will also show whether the estimated increased register can be absorbed by the school without additional teachers. If the average size of section is small, it may be that the estimated increased register can be so distributed that no additional sections need be formed. Hence, if teachers already employed are not doing too much work, additional teachers will not be needed. But if the average size of section is normal, and if the teachers already employed are doing the normal amount of work, then it is obvious that an increased register will necessitate the formation of additional sections, and, hence, must be cared for by additional teachers. Still further, if the average size of section is large, and if the teachers already employed are doing an unusually large amount of work, not only must additional teachers be employed to care for the estimated increased register, but additional teachers should also be employed to reduce over-size sections, and to reduce the work which teachers already employed are doing, to a normal amount.

To be filled out in duplicate and forwarded to City Superintendent MAXWELL through the District Superintendent not later than June 12, 1911.

Report on Need of Teachers in High Schools for 1912

To be used in the preparation of the Departmental Estimate

..... (SCHOOL)

Borough of

New York,

1911.

I. Register, average attendance and number of teachers—entire school:

YEAR	Register Dec. 31	Increase over previous December	Average attendance for year	Increase over previous year	No. teachers includ. vacancies Dec. 31	Increase over previous December
1908
1909
1910

II. Register and number of teachers on Mar. 31 and Oct. 31 since 1908, with estimate of register and teachers on Mar. 1, 1912, and Oct. 31, 1911, and 1912—entire school.

[illegible]

III. Register, attendance and number of teachers by subjects and estimate of new teachers by subjects.

[illegible]

NOTE 1. In column (f), where a teacher is assigned to more than one subject, use fractions whose denominators are the number of periods taught per week.

NOTE 2. The number of teachers estimated in Item III should agree with the number estimated in Item II, i. e., the number of teachers in Item III (f) added to Item III (g), (h) and (i) should equal the number of teachers estimated in Item II (f).

IV. If you ask for an increase in your corps of teachers, please state on the back of this blank the facts upon which you base your estimate.

V. Equipment of special rooms:—

	Kitchen	Workshop	Laboratory	Gymnasium	Sewing Room	Lunch Room	Typewriting Room
Number now in use							
Additional rooms needed for 1912 with designation of rooms							

VI. Extensive repairs or structural changes: State nature and whether in main building or in annex and append to this blank a statement of the necessity for changes.

Signature: _____

Principal.

I approve the principal's estimate in Item V and the estimate of new teachers in Items II and III, except as to (indicate changes clearly)

.....
District Superintendent.

I approve the principal's estimate in Item V and the estimate of new teachers in Items II and III, except as to (indicate changes clearly).....

.....
Associate City Superintendent.

II. Analysis and Criticism of the Board of Education's Blank Used in 1911, Entitled "Report on the Need of Teachers in the High School for 1912"

The blank ¹ calls for a statistical comparison of the register, attendance, and number of teachers during the years 1908, 1909, and 1910. With the tabulated experience of these years as a basis, estimates were made by the principals of the prospective need of teachers. The blank, filled as required, was reviewed and revised, first by the district superintendent, and then by the Associate City Superintendent in charge of high schools, and a duplicate copy was sent to the City Superintendent of Schools. The blank was then submitted to the Finance Department, and the Board of Estimate and Apportionment. It will be seen, therefore, that the principal's estimates were reviewed by several officials of the Board of Education; and that the data and estimates on the blank were then presented to the Board of Estimate and Apportionment as the basis for their action.

An analysis of the blank shows that it is unsatisfactory.

Block I ("Register, Average Attendance and Number of Teachers") covers only three years of past experience. These statistics should be prepared for a sufficient length of time—we suggest five years—to show a general and continued trend in each high school; and also in order to avoid basing budget requests upon an exceptional or temporary condition. The incorporation in this blank of these data for a five year, instead of a three year, period would constitute a better basis for the principal's estimate of the prospective register in his school, and, hence, teachers needed, and, at the same time, would furnish all those who have to pass upon the principal's estimates more satisfactory information by which to judge their validity.

In Block II ("Register and Number of Teachers"), the statistics should likewise cover a five year period for reasons similar to those already stated.

The third item of Block II ("Number of Pupils per Teacher") does not properly belong in any statistical or other blank referring to the high schools. The organization of the high school, in marked contrast to the organization of the elementary school,² precludes the use of such a standard for determining the number of teachers needed as the "number of pupils per teacher." Such an item not only has no significance in high school statistics, but it is misleading. In the high school, a teacher usually gives instruction in only one subject and, hence, meets a number of sections during each day, aggregating from 140 to 245 different pupils, depending on the subject.³

¹ For a copy of the blank see p. 183a.

² See Dr. Bachman's report.

³ For example: First term English is offered five periods per week. A teacher teaching twenty periods would meet four sections (classes). Taking thirty-five as a maximum size of a section, it will be seen that this teacher would meet 140 different

Further, such a standard of estimating the need of teachers is particularly inapplicable to a system of high schools, such as that found in New York City, in which general high schools and special high schools exist side by side, and in which the number of pupils in one building varies from 195, in the Far Rockaway High School, to 2,431, in DeWitt Clinton High School.¹

The average "number of pupils per teacher" in the high schools throughout the city on March 31, 1909, varied from eighteen in Far Rockaway High School (176 pupils), to 30.7 in Eastern District High School (2,248 pupils). On March 31, 1910, the variation is from 18.5 in Far Rockaway High School (195 pupils), to twenty-nine in both the High School of Commerce (1,650 pupils), and Eastern District High School (2,685 pupils). Also the average number of pupils per teacher varies considerably from term to term, owing to the larger number of pupils entering in the February-June than in the September-January term, whereas the number of teachers in service from term to term remains more nearly the same. For example: In Stuyvesant High School, on March 31, 1909, the average "number of pupils per teacher" was 23.8; on October 31, 1909 (the next school year), it fell to 22.7. On March 31, 1910, the "average" was 21.2, and on October 31, 1910 (the next school year), was only 20.0. In other words, there is a variation in this school, from one term to the next, of an average of more than one pupil per teacher, and from one term to the corresponding term of the following year, of an "average" of more than two pupils per teacher. This variation from one term to the next term is typical. The following tabulation will illustrate these variations in selected schools:

High Schools.	On March 31.	On October 31.
Stuyvesant, in 1909	23.8	22.7
" " 1910	21.2	20.0
Morris, in 1909	28.1	27.5
" " 1910	28.9	25.0
Boys', in 1909	24.0	22.0
" " 1910	24.0	23.0
Eastern District, in 1909	30.7	27.4
" " " 1910	29.0	27.2
Far Rockaway, in 1909	18.0	16.0
" " " 1910	18.5	17.0
Flushing, in 1909	21.0	20.0
" " 1910	21.0	19.0

It will be seen, therefore, that in a school system in which there are general and special high schools differing in courses of study and general organization, and high schools varying in size from less than 200

pupils during a week. In the case of history, which is offered three periods per week, a teacher teaching twenty-one periods would meet seven different sections. If, as in the previous case, the sections contain an average of thirty-five pupils, a teacher of history would meet 245 different pupils per week.

¹ From Twelfth Annual Report, City Superintendent, for the year 1910, page 142.

² These figures were taken from the budget blank which was filled by the principals on June 12, 1911.

pupils to more than 4,000 pupils, the "average number of pupils per teacher" is not essential or significant, and, hence, cannot constitute a satisfactory basis for estimating the need of high school teachers. Further, such an item is misleading to those who are not familiar with the organization of the high school, because its very incorporation in such a blank implies that it is significant, whereas the above facts show this implication to be false.

Moreover, even if the "average number of pupils per teacher" were significant the method of securing this "average" in each school is unsatisfactory. The gross register, which includes names of many pupils who never really attended the school (see page 9), is divided by the "number of teachers, including vacancies"; this includes, with teachers, laboratory assistants, library assistants, and clerical assistants, none of whom do teaching; and excludes the principal, who, in several cases, teaches classes regularly. It is clear, therefore, that both the dividend and the divisor in this computation are not properly chosen.

Block III ("Register, Attendance, and Number of Teacher by Subjects") should be modified to cover five years, to correspond with the suggested modification of Blocks I and II. Also, this block contains a faulty item, viz., item (d), ("Highest Attendance on any one day, September 11, 1910, to May 31, 1911"), which was designed to show whether the school is running at its full capacity. Item (d) cannot be used, because the organization of the high school prevents it. For example: Many subjects taught in the high school are offered only three or four days in the week. On February 8, 1911, the day on which there was the highest attendance in the Morris High School¹ in the February-June term, twenty-two out of the fifty-four classes in the history department were not scheduled to meet. It is obvious, therefore, that the attendance in the history department on that date will not show the total number of pupils, nor the average attendance, in that department. Inasmuch as several subjects in the high school are offered fewer than five periods per week, it will be clear that this item of highest attendance on a given day will always fail to include even approximately the highest registration or the highest average attendance in each department.

The "register" used in all of the above table is gross "register," and includes the names of all pupils who applied for admission to the high schools in June, and have not been regularly discharged, even though they may never have spent a day in the school. This number of registered, but not actual pupils, ranges as high as three or four hundred in some high schools. It is clear, therefore, that the "register" used in this blank is unsatisfactory for budget purposes, in that it contains the names

¹ In Morris High School, twenty-two out of the fifty-four classes in history were not scheduled to recite on February 8, 1911. These classes were divided among the different terms as follows:

7—First term classes.
5—Second " "
2—Third " "

6—Fourth term classes.
2—Fifth " "

of a large number of pupils for whom the city needs to make no provision.

The item of clerical, laboratory, and library assistants is misplaced. There is no reason why laboratory, library, and clerical assistants should be counted with teachers as if those assistants gave instruction. To count them with teachers is misleading. The tabulation of data concerning these assistants should be entirely separate from the tabulation of data pertaining to teachers.

The blank, as a whole, lacks continuity and coherence. Block I covers the "register" and the average attendance on December 31, 1908, 1909, and 1910; block II covers the "register" for the same years, but on different dates, viz., March 31 and October 31; block III gives statistics for March 31, 1909, 1910, and 1911, and the "register" for May 31, thus introducing a third date. It will be observed, therefore, that, since there is no one date that runs through these three statistical tables, comparison of the data in these tables is impossible.

Block IV, inviting principals to make a supplementary report explaining the basis on which they estimate the need of additional teachers, is not of sufficient importance to be made coördinate with the statistical tables of the blank, and, therefore, should be given a subordinate place.

Block V, referring to "equipment of special rooms," and Block VI, referring to "extensive repairs or structural changes" in the main building or in the annexes, ought not to be included in a blank which has to do with the need of additional teachers.

Not only is the blank unsatisfactory in respect to the items which it contains, but it does not contain information which it ought to contain. It furnishes no information whatever to show the present organization of any high school—size of section, amount of work to be done in a given subject, or the amount of work which the teachers are doing. The blank does not show whether the size of section, and the amount of work teachers are doing, are in accordance with the standards fixed by the Board of Superintendents. It does not show whether the prospective increased "register" can be absorbed by the high school without forming additional sections, and, hence, whether additional teachers are needed. The blank furnishes only the most general information concerning each high school, and merely registers the opinion of the principal that he is in need of certain additional teachers; but it does not furnish the evidence on which his opinion is based.

Summary

The blank used in 1911 is defective in the following respects:

- (1) The data do not cover a sufficient period of time—only three years.
- (2) The blank contains non-essential and misleading data—e. g., the average number of pupils per teacher, based on the gross register and the teaching force, including persons who do not teach.

[illegible]

II. PUPILS AND TEACHERS—NUMBER OF PUPILS AND NUMBER OF TEACHERS BY SUBJECTS ON MARCH 31st AND OCTOBER 31st FOR FIVE YEARS, WITH AN ESTIMATE BY SUBJECTS OF THE NUMBER OF PUPILS AND OF THE NUMBER OF TEACHERS NEEDED OCTOBER 31st, 1912, MARCH 31st, 1913, and OCTOBER 31st, 1913—ENTIRE SCHOOL.

	1907		1908		1909		1910		1911		1912		1913	
	March 31		October 31		March 31		October 31		March 31		October 31		March 31	
	No. of Teachers	No. of Pupils	No. of Teachers	No. of Pupils	No. of Teachers	No. of Pupils	No. of Teachers	No. of Pupils	No. of Teachers	No. of Pupils	No. of Teachers	No. of Pupils	No. of Teachers	No. of Pupils
	a	b	a	b	a	b	a	b	a	b	a	b	a	b
English														
Elocution														
Latin														
French														
German														
Spanish														
Italian														
Greek														
Biology														
Physics														
Chemistry														
Physiography														
Mathematics														
History														
Economics														
Commercial Branches														
Stenography & Typewriting														
Woodturning, Etc.														
Joinery														
Forge Work														
Foundry Work														
Machine Shop														
Freehand Drawing														
Mechanical Drawing														
Applied Mechanics														
Cooking														
Sewing & Millinery														
Sewing & Dressmaking														
Bookbinding														
Library Practice														
Music														
Physical Training														
Total Number Teachers														

NOTE 1. Under the heading "teachers," chairmen of departments are to be listed in column "a"; and the number of teachers in all other authorized teaching positions in column "b."

NOTE 2. In case a teacher is assigned to teach more than one subject, a fraction whose denominator is the number of periods taught per week and whose numerator is the number of periods taught in that subject should be used.

IV. CLERICAL, LABORATORY, AND LIBRARY ASSISTANTS—NUMBER OF EACH FOR FIVE YEARS, WITH AN ESTIMATE OF THE NUMBER NEEDED IN 1913.

	1907	1908	1909	1910	1911	1912	1913
	Number	Number	Number	Number	Number	Number	Number
Clerical Assistants							
Laboratory "							
Library "							

To be used in preparation of the Departmental Estimate

I. PUPILS—NET REGISTER ON MARCH 31st AND OCTOBER 31st FOR FIVE YEARS, WITH THE ESTIMATED NET REGISTER FOR OCTOBER 31st, 1912, MARCH 31st, 1913, AND OCTOBER 31st, 1913—ENTIRE SCHOOL.¹

[illegible]

NOTE 3. The figures should be for these dates or for the school days next preceding these dates.

[illegible]

I approve the principal's estimate as stated, except as to (indicate changes clearly).....

I approve the principal's estimate as stated, except as to (indicate changes clearly).....

Associate City Superintendent.

Principals are asked to give the data relating to previous years so far as they can be furnished without taxing their clerical force unreasonably. Principals are asked to explain in a supplementary report any data on this blank which are not self-explanatory, and to add in the report any significant budget information which is not included in the blank.

Block I, on this page, Blocks II and IV, on page 4, and Block III, on pages 2 and 3, together with supplementary reports, if any, record the facts on which the estimated needs indicated in Block V are based.

The year dates are merely illustrative; for clearness, they have been introduced throughout the blank and the discussion of it.

- (3) It contains non-comparable and unrelated data—e. g., the dates in the various tables do not correspond.
- (4) It does not contain any data¹ whatever concerning the organization of the school to show whether the recitation sections are of standard size, or whether teachers already employed are teaching the standard number of periods per week.

III. A New Blank Recommended—Analysis

The new blank should embody the data specified above ("1," "2," "3," pages 181-2) and conform to the following principles:

1. Since there is a difference between administrative data and data for budget purposes, administrative data should be included in a blank to be used for budget purposes only so far as such administrative data form the basis of budget estimates.
2. Data showing past experiences often cover practices which ought not to be perpetuated (e. g., large sections and too many periods of teaching per teacher), and, therefore, past experiences should not form the only basis for budget requests.
3. Consequently, past experiences, as the basis of budget estimate, should always be supplemented by data showing the present organization of the school (e. g., size of section, amount of work teachers are doing), in order that justifiable improvements may be incorporated into the future organization of the school.
4. The data showing past experience should be compiled for a sufficient length of time (we suggest five years) to show a general trend in the school, in order that a temporary or exceptional condition may not have too much weight.
5. All relevant data now used by principals in estimating the need of high school teachers should be covered by such a blank in order that those who are responsible for approving budget estimates may have at their disposal the same information for passing on the estimated needs as those who prepare the estimates.

We have prepared the accompanying blank² in conformity with the principles just enumerated, and we recommend that it be adopted for use by the principals of the high schools in estimating the need of high school teachers. The blank covers the following items:

Block I. "Pupils—Net Register on March 31 and October 31 for five years, with the estimated net register October 31, 1912, March 31, 1913, and October 31, 1913—Entire School."

¹ See p. 182, question 3, and the following explanation.

² See insert, p. 187a.

- Block II. "Pupils and Teachers—Number of pupils and number of teachers, by subjects or departments, on March 31 and October 31 for five years, with an estimate, by subjects or departments, of the number of pupils, and of the number of teachers needed October 31, 1912, March 31, 1913, and October 31, 1913—Entire School."
- Block III. "Organization of the School for the Current School Year.—Number of pupils, by subjects or departments, and terms for each school term; number of recitation sections; size of sections; average number of pupils per section; number of periods per week subject is offered; total number of periods of teaching per week; number of teachers employed October 31 and March 31; average number of periods per week taught per teacher; average number of periods of study hall supervision per teacher; number of different sections taught by a teacher; and an estimate of the number of pupils by subjects, or departments and terms, and an estimate of the number of new teachers needed October 31, 1912, March 31, 1913, and October 13, 1913—Main school and annexes separately."
- Block IV. "Clerical, Laboratory and Library Assistants.—Number of each for five years, with an estimate of the number needed in 1913."
- Block V. "Summary of Additional Needs for 1913—Teachers, clerical, laboratory and library assistants."

Block I is designed to show the number of pupils attending each high school, including annexes, each school term for a period of five years, and the rate per cent. of increase, or decrease, in corresponding terms during that period. The net register, as used in this blank, means the number of pupils actually in attendance on the given dates, together with the number of pupils who are absent on those dates, but who are expected to return. This definition of net register eliminates from consideration the pupils who applied for admission to the high school but who never attended, and the pupils who were discharged from the high school in those parts of the term preceding October 31 and March 31, respectively. The dates, March 31 and October 31, have been selected as the dates when the net register in each school has reached an approximately settled condition. Obviously, the net register should not contain the names of pupils who have enrolled merely to use their status as alleged high school pupils to help them in securing a job, nor those pupils who enter the high school for a few weeks, until they have reached the age of sixteen in order to comply with the law. The testimony of the principals, corrobor-

ated by an examination of the records, shows that such pupils will have disappeared regularly before October 31¹ and March 31 in each term.

The item of "average attendance" has been omitted from this blank because the use of the term "net register," as herein defined, makes the use of both "register" and "attendance" unnecessary.

We suggest that the data called for cover a period of five years, because it is believed that the experience of five years is needed to show a normal per cent. of growth in a given school.² On the basis of this growth, and the other data given in the blank, the principal of the school can estimate the number of pupils for whom he must have teachers in the eighteen months for which the estimates are made.

Block II shows the number of pupils by subjects or departments, and the number of first assistants and teachers³ for a period of five years. The number of "teachers" means the number of authorized teaching positions in the high school. This would include a position regardless of whether it was filled by a regularly appointed teacher or a substitute.

The total number of teachers employed each year, for a period of five years, is shown in the summary of Block II. The per cent. of increase can be computed from the facts here given, thereby making it possible to compare the per cent. of increase in the number of teachers with the per cent. of increase in the number of pupils, as shown in Block I.

The average number of different pupils taught in a given subject⁴ by one teacher is not included in this table, first, because the number of periods taught by a teacher has changed from time to time during the past five years; and, second, because the number of pupils which should constitute a section (class), according to the directions of the Board of Superintendents or the Board of Education, has changed frequently during this period. In spite, therefore, of the desirability of fixing a standard number of different pupils per teacher for each subject, these two considerations would so seriously impair the value of such a standard derived from past experience alone as to render its use unsatisfactory. We suggest, nevertheless, that principals give this matter their attention for the purpose of securing a standard number of pupils which each teacher should teach in the various branches. By setting up a theoretically correct provisional standard, and checking the results obtained under it in practice, a satisfactory standard can ultimately be obtained.

¹ On the other hand, an earlier date might be better, provided it is true that these classes of students are eliminated earlier. It is obviously desirable that the date selected in each term should be as near the opening of the term as is consistent with a fairly settled net register. We suggest that the attention of principals be directed to this point, and that a report be made by them on the facts.

² We recommend that each principal make a study of the conditions in his school, to determine the number of years for which it is necessary to tabulate the data in order to show a normal per cent. of growth.

³ The position of junior teacher in the high school was abolished by the enactment of the equal pay law.

⁴ Item "j" in Block III makes it possible to compute approximately the number of different pupils per teacher.

Block III shows certain aspects of the organization of the school (see page 187a). This block furnishes information for budget purposes in that it shows how each high school is organized during the year in which the blank is prepared. Accordingly, the blank will show whether the high school can absorb the increased register without additional teachers, and it will also show whether there are teachers in excess in any subject or department.

The number of teachers needed in a high school depends directly on the number of periods of teaching, and the amount of other work to be done; the number of periods of teaching depends on the number of sections into which pupils have been divided by the principal; the number of sections into which pupils have been divided depends on the number of pupils in the school and their distribution by subjects or departments throughout the eight terms. The number of prospective pupils can be estimated from the general trend of the net register in the school; the distribution of those pupils can be estimated from the similar distribution of the year in which the estimate is made. The distribution, of course, depends upon whether the new students will be in first, second, or later terms of work. It will be seen, therefore, that the number of teachers needed does not depend so directly on the number of pupils as it does on the distribution of those pupils through the eight terms, and the number of sections which must be formed in each term of work to care for them. This block on the organization of the school, therefore, becomes fundamental in estimating the need of high school teachers.

For example: Our study of the present organization of the work in certain subjects (German and mathematics) in the high school indicates that, at least in the first term, sections are altogether too large. In marked contrast to the blank which has been used, this blank will make clear such facts.

Block IV shows the number of clerical, laboratory, and library assistants employed each year during the past five years, and contains an estimate of the number needed in 1913.

Block V contains a summary of the "additional needs for 1913," and, therefore, shows at a glance the additional expenditures which the District Superintendent and the Associate City Superintendent in charge of high schools are called upon to approve, and which the Board of Estimate and Apportionment is asked to allow.

Summary

The new blank gives the net register, the number of pupils and teachers for each subject or department by school terms during a period of five years, with the per cent. of increase in net register, and number of teachers during that period. In addition, the blank contains an

analysis of the organization of the high school in the year of the estimate. The data showing past experience and the detailed analysis of the present organization¹ of the high school together constitute a satisfactory basis for revealing clearly how many teachers are needed. By incorporating in the blank these essential data, on which the principal bases his estimate, the Board of Superintendents and the Board of Estimate and Apportionment are furnished with the information they must have to judge the validity of a principal's estimate.

The blank prepared by us was presented to the high school principals at a conference held at the rooms of the Committee on School Inquiry on November 8, 1911. As a result of that conference, and at our request, the High School Principals' Association instructed its president to appoint a committee² to coöperate with us in working out the further details of the blank. Careful consideration was given to the blank in its present form at our final meeting with the committee, and we recommend its adoption.

IV. Tabulation and Significance of the Data in the New Blank

Attention should be directed to the fact that the data for the main building and the annexes are combined in Blocks I, II, and IV, and are separated in Block III. Data are combined in the former cases, first, because separate data for the main buildings and annexes for a period of five years are not available for most schools; and, second, because we are recommending changes in the high school system by which the annexes should gradually be abolished as permanent institutions. If, after due trial, the principals find that the combined data do not serve the purpose, the data should be furnished separately for each in each block.

Block III (referring to the present organization of the school) calls for separate data for the main buildings and annexes because a separation of the pupils of a school into two distinct groups makes impossible the same kind of organization that could be made if all of the pupils in the annexes and main buildings were together. Hence, in order to show the need of additional teachers, and in what subject or department that need exists, it is necessary to show the organization of the school in the main building and in the annexes separately.

The data on the new blank may be divided, in a general way, into (1) data relating to past experiences of the school (Blocks I, II, and IV), as a basis for estimating the future register and number of teachers needed, and (2) data relating to the present organization of the school (Block III), as a basis for showing how the estimated register is to be organized and how the additional teachers asked for are to be used.

¹ See p. 188.

² The President of the Association appointed such a committee.

I. Data relating to Past Experiences of the School As a Basis for Estimating the Future Register and Number of Teachers Needed.

Block I, in the new blank, is for the purpose of showing the rate per cent. of increase or decrease in the net register of the school (including annexes) March 31 over March 31, and October 31 over October 31, for a period of five years. This tabulated net register for a five year period, and the rate per cent. of increase or decrease, is the basis for the principal's estimated net register for the following eighteen months. If there are unusual conditions in the school which will affect the net register so that the rate per cent. of increase or decrease will not be normal, principals are expected to furnish information concerning such conditions in a supplementary report accompanying this blank.

The importance of making an accurate estimate will be indicated by the fact that this estimate is the basis for further estimates in Blocks II, III, and IV. If this first estimate of the net register is inaccurate, the data in the following blocks cannot be correct. This block not only furnishes the principal with the basis for making his estimated net register, but also furnishes those who have to approve that estimate with the necessary information for judging of its validity.

Block II is for the purpose of showing the distribution of pupils in the school (including annexes) by subjects or departments, on March 31 and October 31 for a period of five years. This tabulated distribution of pupils by subjects or departments on the above dates for a five year period, is the basis for the principal's estimated distribution of the estimated register of Block I. These facts, in turn, become the basis of judgment for those who approve the principal's estimates.

In Block II is also given the number of teachers by subjects or departments, that it took to care for the pupils March 31 and October 31 each year for the same five year period. This tabulation of teachers by subjects or departments for a five year period is the basis for the principal's estimate of the number of teachers needed by subjects or departments to care for the estimated register in Block I, according to its estimated distribution in Block II. From the totals in Block II, the principal can readily compute the per cent. of increase or decrease in the teaching staff from term to term, and from year to year, during the five year period. All of these facts, in turn, become the basis of judgment for those who approve the principal's estimates.

Block IV will be affected by the estimates only as the total register of the school reaches a point where, according to the regulations of the Board of Superintendents, the school is entitled to an additional clerk, or to laboratory or library assistants.

Summary

From these data, relative to past experience, we have:

- (1) The estimated net register for each of the three terms of the eighteen months for which the estimate is made, based upon

- (a) a rate per cent. of increase or decrease by terms over a five year period, and (b) such other supplementary data as the principal submits.
- (2) An estimate of the distribution of this net register (in Block I) by subjects or departments for each of the three terms for which the estimate is made, based upon an actual and similarly tabulated distribution of the net register over the preceding five year period.
- (3) An estimate of the number of teachers needed to care for the estimated net register and its distribution (Blocks I and II), based upon the number of teachers actually employed to care for the net register and its distribution over a five year period.

Thus we have an estimated register, its distribution by subjects or departments, and by terms, and the estimated number of teachers it will take to care for the estimated register as distributed. Each block shows the basis of the estimate in that block, and thus furnishes the officials with the data by which to judge the validity of that estimate. How much teaching this estimated register will entail, and the actual proof of the need of additional teachers, will be shown in the discussion of Block III.

2. Data relating to the Present Organization of the School as a Basis for Showing How the Estimated Register Is to Be Cared for and How the Additional Teachers Asked for Are to Be Used.

As has been stated above, the past experience of a school may represent conditions which should not be perpetuated. Hence, past experience alone cannot constitute a satisfactory basis for estimating the need of additional teachers. The facts called for in this blank, relative to past experience (Blocks I, II, and IV), show the basis of the various estimates made by the principal. Although valuable and essential, these data concerning past experience are rightfully given less prominence in this blank than the facts pertaining to the present organization of the school. The data relating to the present organization of the school are necessary to show how much teaching the estimated register will necessitate, and thus to prove the number of teachers needed, by showing how much work there is for them to do.

Block III contains the data relating to the present organization of the school. In this block is shown the present detailed distribution of all pupils in the school (exclusive of annexes; annexes are given separately), by subjects or departments, and by terms of work which the pupils were taking, on March 31 and October 31 of the year in which the estimate was made. With this distribution as a basis (together with information in Blocks I and II), the principal estimates the further distribution of the estimated net register (of Block I), and the estimated distribution by subjects or departments (of Block II), by showing how

the pupils will probably be distributed through the eight terms of work in each subject or department for each of the three terms for which the estimate is made. The number of teachers employed to care for the pupils under the present organization is also given, with an estimate of the new teachers¹ needed to care for the estimated register for each of the three following terms. This block will contain the data to show what was *not* shown by the blank used in 1912, and what is really fundamental in estimating the need of teachers, viz., first, the size of sections, to show whether there is a possibility of absorbing the estimated increase² in the register without increasing the amount of teaching to be done; and, second, whether, if additional sections are necessary, they can be satisfactorily taught by the teachers³ already employed.

To illustrate the method of preparing the data in Block III, the following chart for the Department of German is offered and explained in detail. (The chart is on page 195.)

This chart shows the actual figures for a department of German at the beginning of the February-June term, 1911, tabulated in proper form. In this chart are given, for the school term, the "number of pupils" (item "a"), the "number of recitation sections" in which they were divided (item "b"), the "size of section" (item "c"), and the "average number of pupils per section" (item "d").⁴ There is also given the "number of periods per week the subject is offered" (item "e"), and the "total number of periods of teaching per week" (item "f").⁵ Thus far the data are to be provided by terms, and in summary form for the department. The totals, it should be noted, are to be placed opposite the subject in each case.

Beginning with the "number of teachers employed" (item "g"), except as indicated later, the information is to be given only for the department as a whole, and not for each term. It would be futile to attempt to give the number of teachers by terms, and unnecessary for budget purposes, because a teacher is appointed to teach a subject, or within a department of study, and not to teach a particular term of work, and also, because one teacher usually teaches pupils in several different terms of work.

¹In Block II the estimate is for all the teachers necessary (old and new combined) to care for the estimated net register; in Block III, it seemed desirable to indicate where new teachers were asked for. The number of teachers estimated in Block II, therefore, will equal the sum of the teachers already employed (item "g"), and the new ones needed (items "h" and "i") in Block III.

²For example: The increased register may be absorbed if the sections in the terms of work into which the new pupils will be distributed are unusually small.

³For example: The additional sections might be taught by teachers already employed if those teachers were not carrying approximately twenty-five periods of work (teaching, study hall supervision, and administrative work) per week.

⁴This average, of course, is found by dividing the number of pupils in a given term by the number of sections into which they were divided.

⁵This figure for item "f" is found by multiplying the number of periods per week the subject is offered (item "e") by the number of recitation sections to be taught (item "b").

	a	b	c																	d	e	f	g	h	i	j	k	l
			Size of Sections																									
	Number of pupils	Number of recitation sections	Under 15	15-17	18-20	21-23	24-26	27-29	30-32	33-35	36-38	39-41	42-44	45-47	48-50	51 and over	Average number of pupils per section	Number of periods per week subject is offered	Total number of periods of teaching per week	Number of teachers employed March 31, 1911	Average number of periods per week taught per teacher	Average number of periods of study hall supervision	Number of different sections taught by a teacher	Estimated number of pupils March 31, 1912	Number new teachers needed February-June term			
German.....	1135	35	1	1	1	1	1	1	1	1	1	6	1	1	1	1	32.4	5	173	74	22.7	1.3	5	1192	0			
First Term.....	359	9	1	1	1	1	1	1	1	1	1	6	1	1	1	1	39.9	5	45	1	1	1	1	370	1			
Second ".....	272	8	1	1	1	1	1	1	1	1	1	5	1	1	1	1	34.0	5	40	1	1	1	1	300	1			
Third ".....	175	6	1	1	1	1	1	1	1	1	1	4	1	1	1	1	29.1	5	30	1	1	1	1	173	1			
Fourth ".....	135	4	1	1	1	1	1	1	1	1	1	3	1	1	1	1	33.7	5	20	1	1	1	1	131	1			
Fifth ".....	88	3	1	1	1	1	1	1	1	1	1	2	1	1	1	1	27.6	5	15	1	1	1	1	90	1			
Sixth ".....	82	3	1	1	1	1	1	1	1	1	1	2	1	1	1	1	27.3	4	15	1	1	1	1	90	1			
Seventh ".....	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17.0	4	4	1	1	1	1	20	1			
Eighth ".....	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12.0	4	4	1	1	1	1	15	1			

Note—The data in this chart are for the February-June term, 1911, and were taken from the "Program of Daily Recitation" sheets furnished the Department of Education by the principal on February 1st, 1911. The item "1" shows that the budget blank asked for no additional teachers for the February-June term, 1912.

One additional teacher was asked for, for the September-January term, 1911, and another for the September-January term, 1912. Hence, in the February-June term, 1912, there would be one more teacher than in 1911, and in 1913, two more than in 1911. The figure which we have to deal with in the case of item "1" then, is 8 4-5 teachers.

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Continuing to analyze the items in the chart, we have the "number of teachers employed" (item "g"), the "average number of periods per week taught per teacher" (item "h"),¹ and the "average number of periods per week of study hall supervision" (item "i")² done by each teacher. To find, therefore, the average amount of teaching and study hall supervision which teachers are doing one merely has to add items "h" and "i." Along with these items should be added, also, the further consideration that over 50 per cent. of the teachers throughout the city are carrying administrative responsibilities.³ The "number of different sections taught by a teacher" in the department (item "j") is included to make it possible to compute approximately the number of different pupils⁴ the teacher meets each week.

Item "k" in Block III contains a (conjectural) detailed distribution by terms of the principal's estimated net register for the one March 31 which occurs during the eighteen months for which the estimate is made. Item "l" contains the "number of new teachers" the principal has estimated should be employed to help care for the estimated net register.

Summary

From these data, relative to the present organization of the school, we have:

- (1) The estimated distribution by terms of work, as well as school terms, of the estimated net register, based upon the actual distribution by subjects or departments for five years (Block II), and the present distribution in the school (Block III).
- (2) The actual size (in steps of three), and the average size of recitation sections by terms, as a basis for showing whether the estimated increase in net register can be absorbed without increasing the number of recitation sections, and, further, whether the sections are now conforming to the standards of the Board of Superintendents.

¹ The average number of periods taught per teacher is computed from figures under items "f" and "g". In view of the fact that there is a chairman of department, who, in order to supervise the work of the department, is assigned fewer teaching periods than the regular teachers, it is necessary to deduct the amount of teaching he does before finding the "average" for the department. Deducting nineteen periods taught by the chairman, from 173 periods, the total number to be taught, we have left 154 periods to be taught by six and four-fifths teachers (exclusive of the chairman). This gives an average of 22.7 periods of teaching per week, which figure should be placed in the column opposite the name of the department.

² There are no figures in this blank upon which to compute this "average." The necessary data are to be found, however, in the "Program of Daily Recitation" sheets furnished the Superintendent's office by the principals at the beginning of each term. Hence, the officials in the Superintendent's office have the data available for checking the figures of the principals, and such data should be accessible to the Board of Estimate and Apportionment.

³ See p. 130 for basis of this statement.

⁴ This number can be approximately found by multiplying the average size of sections (as given in item "d") by the number of different sections which a teacher meets (item "j").

- (3) The facts from which to ascertain the amount of teaching necessary to care for the estimated net register, based upon the amount of teaching required to care for the pupils now in the school (Block III).
- (4) The number of teachers employed to care for the present net register, as a basis for determining whether these teachers can do the additional teaching necessitated by an estimated increase in the net register, and whether they are teaching the standard number of periods fixed by the Board of Superintendents.

V. Using the Data on the New Blank

As has already been stated, the data relative to past experiences must be accompanied by data relating to the present organization of the school. Inasmuch as the principal plans for the future of his school on the basis of its present organization, we shall make Block III the basis of our discussion. As will usually be the case, the reason for asking for additional teachers is an anticipated increase in the number of pupils in the department. The first step, therefore, is to establish the validity of the increase estimated by the principal. The second step is to show how the estimated register can be cared for by the teachers already employed plus the new teachers asked for.

1. To Establish the Validity of the Principal's Estimate

Block III shows the basis for the estimated distribution of pupils *by terms* only, and not the basis for the number of pupils in the department. The validity of the principal's estimate of the number of pupils in German in Block III is to be judged by the facts in Blocks II and I, respectively, because in these blocks are the basis for the estimate of the distribution of pupils by departments of study (Block II), and of the net register of the school (Block I.) By these three facts, viz., the rate per cent. of increase or decrease, for a five year period, in the number of pupils taking German (from Block II), the rate per cent. of increase or decrease in the net register, Block I, and whatever facts the principal furnishes in a supplementary report, is to be judged the validity of the principal's estimate of the number of pupils to be cared for in the department of German during the period for which the estimate is made.

If Block II of the new blank were properly filled out, we would have the increase or decrease in the number of pupils taking German, term over term, for a five year period; but the blank for 1912 used by the principals does not furnish the necessary data with which to prepare completely Blocks II and III in the new blank. However, to use the 1912 data will illustrate the method of using them, and will show how inadequate they were for the purpose which they were intended to serve.

From the statistics in the blank for 1912, we find that there was an increase in the number of pupils taking German in 1910 over 1909 of 2.26 per cent., and that there was an increase in 1911 over 1910 of 5.97 per cent. These data differ from the data called for in the new blank in two respects: (1) They are rate per cents. of yearly increase, and not of increase by terms; and (2) they cover only three years instead of five years. With only these data as a basis, the validity of the principals' estimated increase in register remains undetermined, because an important question is unanswered, namely: Was the rate per cent. of increase in 1911 over 1910 of 5.79 per cent. a normal or an exceptional increase? The data for a five year period, which we suggest in the new blank, would furnish a basis for answering the question.

Block II shows an increase in the number of pupils taking German, based on an increase in the net register, given in Block I. Hence, Block I should also be consulted to prove the validity of the principal's estimated increase in the number of pupils in the department.¹

The data on the blank used in 1912 cover the "register" on December 31, 1908, 1909, and 1910 (not by terms, as called for in the new blank) from which we find that the increase in register (gross) in

1909 over 1908 was 21.66 per cent.

and that the increase in

1910 over 1909 was 19.99 per cent.

It will be seen, therefore, that the rate per cent. of increase in the register (gross) of the school as a whole was not as great in the last year as it was in the preceding year. Here again, we cannot pass judgment on the estimated increase in register, owing to insufficient data. In the case of the school as a whole, as well as by departments, data for more than three years are required for passing judgment on the principal's estimates. If we had the data for a five year period in each case we would have, at least, four per cents. (and might have five²) as a basis for judging what the rate per cent. of increase was likely to be.

In view of the fact that we have had no adequate basis for determining the rate per cent. of increase in net register, in order to complete our illustration, we have assumed an increase of 5 per cent. in the number of

¹ Obviously, there must be a direct relationship between the estimated increase or decrease in pupils by subjects or departments in Block II and the estimated increase or decrease of the net register of the school as a whole in Block I, even though that relationship cannot be shown statistically. Every pupil in Block I must be accounted for in some subject or department in Block II; but, on the other hand, every pupil in Block I will be shown in Block II in from one to five or more different subjects or departments, according to the subjects or courses which the pupil takes. If, therefore, the principal estimates in Block I an increase in the net register in his school for the following eighteen months, a corresponding increase in the number of pupils must be shown in certain subjects or departments in Blocks II and III, and might also be shown in Block IV if the increase in the number of pupils in the school brought the net register to a point where the school would be entitled to an additional clerk.

² We suggest that principals adopt the practice of moving to the left in each block all of the data on past experience, cutting off merely one year (e. g., in the accompanying blank, the figures for 1907 in Block I). This practice would give in each of Blocks I, II, and IV, five rate per cents. as a basis for judgment instead of four.

pupils in the department of German for the February-June term of 1912. This per cent. of increase would give 1,192 pupils.

In Block III, the principal estimates the distribution of pupils in the department by the terms of work which they will be doing. Of the 1,192 pupils expected in the February-June term, 1912, he¹ estimates that 370 of them will be in first term, 300 in the second term, and so on. The basis of this estimate would be the actual distribution of pupils shown by the data in this same block, and the principal's knowledge of conditions in his school.

Summary

It will be seen, therefore, that the validity of the principal's estimated net register in Block I is to be judged by the rate per cent. of increase or decrease in the net register over a five year period in Block I, supplemented by any additional information which the principal deems important enough to furnish. The validity of the principal's estimate of the number of pupils by subjects or departments in Block II is to be judged by the tabulated experience of a five year period in Block II and the net register, both actual and estimated, in Block I. The validity of the principal's estimated distribution of pupils by terms of work in the various subjects or departments in Block III is to be judged by the distribution of pupils already in the school, as shown in the same block. In the same manner, the principal's estimate of the number of teachers, by subjects or departments, and, finally, the total number of new teachers needed are to be judged.

Block I enables us to establish as nearly as possible, what the net register in the school is likely to be; Block II enables us to determine the probable distribution of pupils by subjects or departments. The following paragraphs will show how Block III enables us to determine how much teaching there will be to do, and how the teachers already employed, plus the additional teachers, if any, can do that teaching.

2. To Determine the Number of Teachers Needed

In the budget blank prepared on June 12, 1911, the principal of this high school asked for, and was allowed, one additional teacher of German for the September-January term 1911, and one for the September-January term, 1912. Assuming that the one teacher was appointed in the September-January term, 1911, as indicated, this teacher will be in the school in the February-June term, 1912. Therefore, let us raise the question of the amount of work there will be for this one additional teacher in the February-June term, 1912. The data on the blank should answer the following questions:

¹ This distribution is, of course, purely conjectural.

- a. Will the estimated number of pupils in the department of German require the formation of more sections than are now found in the department?
- b. Can teachers already employed reasonably be asked to do more teaching than they are now doing?
- c. If additional sections are necessary, how many additional periods of teaching will they necessitate?
- d. How many teachers are needed to do all of the teaching required?

a. The first question to be answered is: Will the estimated number of pupils in the department of German require the formation of more sections than are now found in the department? In other words, can these pupils, in the estimated net register, be organized into sections according to the standards¹ fixed by the Board of Superintendents without increasing the amount of teaching now being done in the department? The present organization of the department must answer this question.

The chart shows that the 359 pupils in first term's work were organized into nine sections, ranging in size from thirty-six to forty-four pupils, and averaging, approximately, forty pupils per section. Measured by the standard size of section for first term pupils, several of these sections exceed the maximum, all approximate it, and none are under-size. It is clear, then, that no additional pupils can be absorbed in this term of work, inasmuch as there should probably have been one more section for pupils already in the department in order to reduce the number of pupils per section, so that all sections can conform to the standard.

In the second term, the pupils were organized into eight sections, ranging in size from twenty-four to forty-one pupils, and averaging thirty-four pupils per section. There is one section under-size, and there are four over-size. In view of this condition, one more section was needed to make it possible to keep the sections within the limits of the standard fixed by the Board of Superintendents, so that, of course, no pupils can be cared for without additional sections.

In the third term, pupils were organized into six sections, ranging in size from fifteen to forty-seven pupils, and averaging 29.1 pupils per section. This is an excellent illustration of how untrustworthy averages are: the average of 29.1 pupils is apparently ideal, and yet it is based upon sections that are altogether too small and altogether too large. It should be pointed out, however, that for budget purposes, it really makes no difference whether the pupils in the section of fifteen pupils

¹The standard size of section fixed by the Board of Superintendents is from thirty to forty pupils in first term work, and thirty to thirty-five pupils in other terms of work. Inasmuch as this study is really made not so much to question the need of this teacher as to indicate the method of using the data, we shall measure the organization of the work of this department in this school by the standards fixed by the Board of Superintendents, without questioning those standards. For a discussion of these standards, see p. 112.

and of forty-seven pupils were thus distributed, or whether they were distributed into two sections of thirty-one pupils each, because the amount of teaching will be exactly the same. Obviously, from an educational point of view, in both cases the size of section is undesirable. Measured by the standard of thirty to thirty-five pupils per section, it is clear that about fifteen pupils can be added to the 175 pupils without making it necessary to form an additional section.

In the fourth term, there are four sections, ranging from twenty-seven to thirty-eight pupils, and averaging 33.7 pupils per section. Two sections are over-size, but if these 135 pupils had been distributed into five sections, to reduce these over-size sections, there would have resulted some under-size sections, so that the principal has made a satisfactory distribution of pupils. It is clear that no additional pupils could be accommodated in this term of work without the formation of additional sections.

In the fifth term, there were three sections, ranging in size from twenty-four to thirty-two pupils, and averaging 27.6 pupils per section. There were some under-size sections which were unavoidable, because if the principal had formed only two sections, both of them would have been over-size. It is clear that about fifteen pupils in this term of work could be accommodated without the formation of additional sections.

In the sixth term, there were three sections, ranging in size from eighteen to thirty-eight pupils per section, and averaging 27.3 pupils per section. Some of these sections are under-size, but, as in the case of the fifth term, and for the same reason, they are unavoidable. It is clear that about the same number of pupils could be absorbed in sixth term work as could be in fifth term.

In the seventh term, there is one section, containing seventeen pupils—all of the pupils doing that term of work; hence, the one section is unavoidable and defensible. Obviously, twelve or fifteen more pupils could be accommodated in this term of work without necessitating an additional section.

In the eighth term, there is one section, containing twelve pupils—all of the pupils doing that term of work. Hence, the one section is unavoidable and defensible. It is clear again that fifteen or twenty pupils can be absorbed in this term of work without necessitating the formation of additional sections.

From the above analysis certain facts are clear :

- I. Any increase in the number of pupils in the first, second, or fourth terms of work would require the formation of additional sections, and, hence, would increase the amount of teaching to be done. Another section should be formed in each of the first and second terms to reduce over-size sections that already exist in the school.

2. A considerable number of pupils,¹ from seventy-five to eighty, could be cared for in the third, fifth, sixth, seventh, and eighth terms without making necessary the formation of any additional sections, and, hence, without increasing the amount of teaching which is now being done in the department.

b. The second question is: Can the teachers already employed reasonably be expected to do more teaching than they are now doing? It has been shown that there is to be an increase in the amount of teaching because there must be additional sections. To answer the question we now need to know whether teachers already employed are teaching the standard amount of work fixed by the Board of Superintendents.

The chart shows that the teachers already employed are teaching an average of 22.7 (item "h") periods per week, and they are supervising study halls an average of 1.3 (item "i") periods per week. It will be seen, therefore, that teachers are occupied with definitely assigned duties twenty-four of the thirty periods in the week. In addition, these teachers are also assigned general administrative duties. Hence, these teachers are doing an average of only one period less than the maximum standard amount of assigned work per week. There is no way of determining just how many teaching periods should be allowed for the general administrative work which has been assigned to these teachers, but, leaving that out of consideration entirely, these teachers cannot, according to the standard, be asked to carry more than an average of one additional period per week. This would really in practice, make it possible for these seven and four-fifths teachers already employed to teach only one more section than they are now teaching, and this only in case they carry the maximum amount of work. It is clear, therefore, that any increase in the amount of teaching beyond five periods per week must be cared for by additional teachers, and probably all of it should be, if these teachers have much administrative work.

c. The third question is: If additional sections are necessary, how many additional periods of teaching will they necessitate?

With the estimate of the number of pupils in the department of German in this school on March 31, 1912 (item "k"), and their distribution by terms of work, as indicated, the number of periods of teaching can be easily found. Obviously, the principal desires to maintain in his school a size of section and amount of teaching per week per teacher, in accordance with the standard, or standards, of the Board of Superintendents. With such a method of estimating the need of additional teachers as we are here recommending, the principal would be given an opportunity to improve the organization of his school by re-adjusting under-size

¹ This shows how important it is to know the probable distribution of the estimated net register according to terms of work which the pupils are doing, before the amount of teaching to be done can be approximately estimated, and hence before the number of teachers needed can be estimated.

or over-size sections, and an opportunity to distribute evenly the work of teachers, from term to term, in the various departments. We have already seen (p. 200) that there should have been an additional section for pupils already in the school in first term work, and one additional section in second term, making a total of ten periods of teaching more than was being done. In planning for the future, naturally the principal will try to improve these conditions. The estimate of the amount of teaching to be done should always be on the basis of the standards fixed by the Board of Superintendents, both as to teaching and size of sections. From the figures in item "k," we find ¹ that the following additional sections would be necessary owing to the estimated increased register, resulting in additional periods of teaching, as follows:

2 additional sections in 1st term—10 periods of teaching

1 additional section in 2nd term—5 periods of teaching

Except in these two terms, no additional sections would be necessary, so that the total amount of additional teaching resulting from the increased register is fifteen periods per week. The total amount of teaching to be done on March 31, 1912, would, therefore, be 188 periods per week (173 periods, item "i," plus fifteen additional periods computed from item "k"). This is at least ten periods, and probably fifteen periods, more teaching than can be done by the teachers already employed.

d. The fourth, and fundamental, question is: How many teachers are needed to do all of the teaching required? We have shown that the estimated net register will make 188 periods of teachings, with sections organized according to the standards of the Board of Superintendents. Deducting twenty periods ² to be taught by the chairman of the department, we have 168 periods of teaching to be divided among the six and four-fifth teachers already employed. This would give an average of practically twenty-five periods of teaching, without taking into account study hall supervision or other administrative duties. If we include the one additional teacher allowed the previous term, the average number of periods per week of teaching would be 22.75. If to this we add the average amount of study hall supervision of the six and four-fifths teachers already employed, viz., 1.3 periods, we have an average of 24.+ periods per week per teacher. It should be pointed out, however, that, as the number of pupils increases in a school, the amount of study hall supervision and other administrative duties increases, so that, in planning for the future, it is not safe to consider only the amount of this work formerly done by teachers of the department. This is particularly true in this case, because the average of 1.3 periods of study hall supervision per week is unusually small, the average for the city during the

¹ Taking the standard of thirty to forty pupils for first term sections, and thirty to thirty-five for all other terms of work.

² For our recommendations concerning the amount of teaching to be done by chairmen of departments, see pp. 119-20.

same term being 3.10 periods per teacher per week. If these seven and four-fifths teachers were assigned the average number of periods of study hall supervision done throughout the city their combined weekly periods of teaching and study hall supervision would be an average of nearly twenty-six periods, or about 4 per cent. more work than the maximum standard. It will be seen, therefore, that, to maintain the standard size of section, and the standard amount of teaching per week, one additional teacher for the February-June term of 1912 was needed. It should be here pointed out that a sufficient amount of money must be at the disposal of the Board of Education for the employment of teachers which are likely to be needed, as shown above, in order not to hamper the work of the schools. On the other hand, the city should lose no money by appropriating it a year, or a year and a half ahead, because, unless teachers are really needed when the time comes, they are not appointed.

Summary

We have shown:

1. That the principal had organized his school as nearly according to the standards fixed by the Board of Superintendents as the number of teachers he had would permit.
2. That, in that organization, the size of section in first, second, and fourth terms exceeded considerably the maximum of the aforesaid standards.
3. That the estimated distribution of the pupils in the Department of German would require the formation of additional sections.
4. That the teachers already employed could not do much, if any, additional teaching.
5. That the additional teaching necessitated by these additional sections would amount to fifteen periods per week.
6. That, with the services of one additional teacher, the average number of periods per week of teachers in the Department of German in this school on March 31, 1912, would approximately approach the maximum standard of twenty-five periods of work per week.

Hence, we conclude that an additional teacher was necessary to maintain the organization of the school according to the standards of the Board of Superintendents.

We have now analyzed the preparation of the data in the new blank, and the method of using it in estimating the need of additional teachers. We have shown that the blank contains the essential data on which the principal's estimated need of additional teachers rests. With the data contained in the blank, it is possible to judge the validity of each one of the estimates made by the principal upon which he finally bases his estimate of the need of additional teachers. With these data, those who ap-

prove the estimates can not only test the validity of the principal's estimates of increased register, distribution of pupils by departments and terms, and the number of new teachers needed; but they can also examine into the organization of the school, as presented in this blank, to see whether the principal is approximating the standards fixed by the Board of Superintendents. These data, on the organization of the school, make it possible to determine where new teachers are actually needed, and also where there are "teachers in excess," who should be transferred. It becomes necessary, therefore, for this latter purpose, for the officials who approve of the principal's estimates, whether Board of Superintendents, Board of Education, or Board of Estimate and Apportionment, to examine in detail each item in the blank, in order to determine whether the appropriation asked for is necessary or unnecessary.

The data in the blank are comparable, related, essential, and comprehensive. The use of these data will place the estimating of the need of high school teachers on the basis of recorded facts.

VI. Factors Conditioning the Effective Use of the New Blank

Our conferences with the high school principals on the new blank have revealed no little fear on their part, that the data might be misinterpreted by those who have to approve of budget estimates. Nevertheless, the principals have expressed themselves as satisfied with the blank. It is obviously important that there should be a clear understanding of the purpose of the blank, and the method of using it.

The Board of Superintendents, the Board of Education, and the Board of Estimate and Apportionment should have at their disposal the essential information which the principals use in estimating their need of additional teachers. The high school principals have heretofore estimated with care the teachers needed, but the blank used has not incorporated all of the essential facts. The purpose of the new blank is to show the basis of recorded facts on which the principal's estimated need for additional teachers rests; this basis being clearly shown, the responsibility of the principal is discharged. The Board of Superintendents and the Board of Education then become responsible for approving or disapproving, the principal's estimates, and the Board of Estimate and Apportionment, in turn, becomes responsible for granting or withholding, the funds required by the estimates.

This blank must be interpreted by the educational authorities, and by the Board of Estimate and Apportionment in the light of high school conditions and needs. For instance: This blank will show that there are small classes in Greek in some schools, and also relatively small classes in the fourth year of other elective subjects. This is inevitable, first, because the number of pupils taking Greek as a college preparatory subject is always small; and, second, because the principal of a high school cannot control arbitrarily the number of pupils in elective sub-

jects. If a boy or girl enters a high school having a course of study in which Greek is found, to take a preparatory course for a college which requires or prefers Greek as an entrance subject, the high school ought, in general, to afford the pupil instruction in Greek. If it does not, it fails to discharge its full duty, which is to afford all pupils equal opportunities to obtain the kind of instruction they need.

Again, the pupils taking an elective subject may number several hundred in the first term, but the number diminishes so rapidly that, by the fourth year, it is relatively small, often, indeed, numbering not more than fifteen or twenty pupils—one section. For example: For those pupils who elect in their first year to take the four years of German offered in the course of study, the school ought to provide that instruction throughout the four years, even though the number of pupils studying fourth year German is relatively small. It is, of course, legitimate for a school to fix a minimum number of pupils per section, and announce that a section will not be organized for a smaller number of pupils; but that minimum should not be fixed too high, and need not be the same for all subjects, or all schools. Small classes in some subjects—e. g., Greek—and later years of other elective subjects—e. g., mathematics, German, French—are inevitable and representative of normal conditions, and are defensible; hence, such conditions should not subject the principal to the contention that the organization of his school is unsatisfactory, nor to the charge of having over-estimated his need of teachers.

The data contained in this blank should not be interpreted according to the standards of the elementary school. In the elementary school, the organization is such that a teacher is provided for every forty or forty-five pupils in a given grade. The organization of the high school precludes the possibility of any such simple computation to determine the need of additional teachers.¹ Consequently, the authorities who pass on the estimates of the high school principals must know the conditions in the high schools in order to be able to approve or disapprove, intelligently the principals' requests for additional teachers. Unless this approval is arrived at with the same care that is used by the principals in the preparation of their estimates, the effort to place the estimated need of high school teachers on a basis of recorded facts will be futile.

The fear has been expressed by high school principals that, even if this blank is satisfactory, it is likely that it will not be used for a sufficient length of time to prove its value. Experience has caused them to feel that changes among officials are likely to result in change of blanks. We suggest that the new blank be used for a reasonable length of time; and that the principals be invited annually by the Board of Education and by the Board of Estimate and Apportionment to make such suggestions of changes for improving it as experience may show are desirable.

The blank is the result of careful deliberation by us, and by the high

¹ See footnote 3, p. 183.

school principals, in view of the needs of the high schools, and of the information required by the school authorities, and the Board of Estimate and Apportionment. A thoroughly satisfactory blank can be attained only when the authorities adopt some method by which the proper practice in using the blank may be utilized as a basis for improving it. Inasmuch as the purpose of the school authorities and the Board of Estimate and Apportionment is, or should be, to secure the recorded facts on which the principals base their estimates, that blank is satisfactory which is comprehensive enough to furnish such information in the clearest form. On the other hand, as has already been said, the particular form of the blank ought to be revised from time to time, in accordance with suggestions made by the principals; inasmuch as they are the ones best qualified to suggest modifications in it—assuming, of course, that it shall always present clearly the facts which the Board of Education and the Board of Estimate and Apportionment need for their purposes.

We suggest that a representative of the high school principals be invited to be present at all conferences of the school authorities and the Board of Estimate and Apportionment, in which the high school estimates are under consideration.

Summary

To sum up:

1. The principals, the Board of Education, and the Board of Estimate and Apportionment should have a clear understanding of the purpose and method of using this blank.
2. The purpose of this blank is to provide a means of putting the estimated need of teachers by the high school principals on a basis of recorded facts.
3. After the principal has furnished the necessary data on which he makes his estimate, the responsibility for approving these estimates rests on the Board of Superintendents, and the responsibility for granting the required funds rests on the Board of Estimate and Apportionment.
4. The data and estimates must be interpreted in the light of high school conditions and needs, and not according to elementary school conditions and needs.
5. The school authorities and the Board of Estimate and Apportionment should exercise the same care in passing on the data and the estimates, that has been devoted to the preparation of the data and estimates by the principals.
6. The blank should be used for a reasonable period of time; and it should be revised by the principals as experience suggests the need of revision—always, however, with a view to providing more adequately the information needed by the school authorities and the Board of Estimate and Apportionment.

If these considerations are clearly understood and agreed upon by the principals who prepare the data on the blank, by the Board of Superintendents and the Board of Education, who are called upon to approve of the principals' estimates, and by the Board of Estimate and Apportionment, who finally approve the request for funds, the fears which have been expressed by the principals concerning the use of this blank, and the data which it contains, will be groundless.

"COURSE" (PROGRAMS) OF STUDY

CORRESPONDENCE BETWEEN THE COMMITTEE ON SCHOOL
INQUIRY, AND PROF. PAUL H. HANUS AND PROF. CALVIN
O. DAVIS CONCERNING PROF. DAVIS'S REPORT.

Letter from the Chairman of the Committee on School Inquiry to Dr. Calvin
O. Davis proffering questions.

AUGUST 13, 1912.

PROF. CALVIN O. DAVIS,
*University of Michigan,
Ann Arbor, Mich.*

DEAR SIR:—The Committee on School Inquiry, after reading the galley proof of your report rendered to it, feels that the report might be strengthened in certain particulars, as to which it desires to offer you the following suggestions with the request that you supplement the report as indicated. If you are able to amend and supplement the report as desired, the Committee requests that you be good enough to forward to it typewritten amendments to the galley proof now in hand, which the Committee will then transmit to the printer for new galley.

1. Shall the Committee number your tables outlining the New York High School program of studies, etc., and shall it repeat the headings of the first part of the table on the second and third parts of the table? (Galley 88.)

2. You have omitted to state on table 2 (galley 89) whether alternatives are included either in prescriptives or in electives, whereas you do show such alternatives in galley 88. Would it not be well to state the alternatives in both cases?

3. Please indicate why you selected Boston, Chicago, Cincinnati, Cleveland, Detroit, Indianapolis, Newark, Los Angeles, Milwaukee, and St. Louis for comparison with New York City (galley 91).

4. Would the result be appreciably different if comparison were made with Philadelphia, Pittsburgh, San Francisco, Montclair, Springfield, Buffalo, Portland, St. Paul, Kansas City, and Atlanta? If not, will you please say so specifically in the report (galley 91)?

5. With respect to the comparisons between New York and other cities made by you in point of syllabi, which is the newer standard for syllabus to be found in High Schools—that of New York City, or that represented in the other ten cities cited by you (galley 91)?

6. Would not a statement such as appears on preceding galleys make clear your comparisons of the time given to subjects (galley 92)?

7. Will you prepare a consolidated table of the ranking of cities in all subjects to supplement tables 4 and 6 on galley 93 (galley 92)? Would you prefer to have the Committee prepare such a table and submit it to you for adoption and inclusion in your report?

8. Please refer to authorities (important discussions in educational literature and in education meetings) to support the standards set up in your report (galley 92).

10. Please indicate to what extent your comparison of the administration of the New York syllabus with the syllabus itself, and to what extent your criticisms of administration, are based upon field examination of New York schools, giving the number of schools visited, number of recitations observed, etc. (galley 92).

11. You have stated the amount of history offered but have not stated the amount of English offered. Would it not be wise to make the statement for English (galley 92)?

12. Please indicate in the heading of table 4 and in the accompanying discussion just what the term "total periods" means. Does it mean the total periods per week in four years? Further, do four periods a week for a half year count as two periods in your tables which give totals (galley 93)?

13. Please give the ranking of each city by number in each subject, and show for each city the total counts in first rank, second rank, etc. (galley 93). Would you prefer to have the Committee prepare this table as indicated in foregoing question No. 7?

14. Would it not be well to refer to your previous discussion of courses for different years? For example, galley 89 (galley 95)?

15. Please give us tables of comparison such as you have used to make clear your explanation and discussion of the general course (galley 96 ff.).

16. Have you any data to indicate what proportion of children are in each of the two groups mentioned by you (galley 100)?

17. Would it not be wise to include here the map prepared by our local high school teachers showing the different distances traversed from home to school by pupils attending the Brooklyn Manual Training School (galley 101)?

18. With reference to paragraph 6, we do not see that Mr. Thompson has shown how special subjects may be made available in general courses. Can you make this clear (galley 102)?

19. The terminology in summaries differs from that used by you in early parts of your reports: for example, is not "industrial" used in place of "manual training," etc.?

20. With regard to group 2, we are informed that most cities are providing technical schools rather than manual training schools as you recommend. Please explain our reasons for recommending manual training.

Please let me know by return mail how soon I may expect from you the material requested.

Respectfully,

JOHN PURROY MITCHEL,

Chairman, Committee on School Inquiry.

AUGUST 21, 1912.

PROF. CALVIN O. DAVIS,

*University of Michigan,
Ann Arbor, Mich.*

I just asked Prof. Hanus by telephone to return a galley to you.

BURDETTE G. LEWIS.

Letter from Dr. Calvin O. Davis to Prof. Paul H. Hanus explaining delay in answering questions proffered in the letter of the Chairman of the Committee on School Inquiry.

ANN ARBOR, MICHIGAN, OCTOBER 27, 1912.

MY DEAR PROFESSOR HANUS:—I shall have to apologize for my thoughtlessness in not conforming to your suggestions made last September. I recall now I did receive your letter then, but, not having the galley proof, I could not know just the significance of Mr. Mitchel's questions. When the galley proof arrived I had forgotten or mislaid your letter of advice, and hence proceeded according to the earlier plan.

Now, I have no copy of Mr. Mitchel's questions (having enclosed his letter to you last week). However, I have a copy of my replies and believe I can group his questions according to your classification. I will attempt to do so. If you wish to change the classification of any question, please do so.

Regretting my carelessness, but partially excusing myself because of stress of work this fall, I am,

Very sincerely yours,

C. O. DAVIS.

Replies to Queries and Suggestions made by the Committee on School Inquiry on the Sub-Report of C. O. Davis.

1. Would have been done without President Mitchel's suggestion.
 2. We have indicated "alternative" subjects in Table II. to show that there are *nominally* provisions of this kind. Since, however, the "alternative" choices in the "general course" lie wholly in the field of language study (except that a temporary alternative choice is permitted in history in schools that are making the transition from the order of the old syllabus to the new), and since in every subsequent analysis and discussion we have regarded the alternative choice in foreign language study as an absolute prescription in that department, there, strictly speaking, are no alternative choices for any student in the general course in New York City. We have, I think, made our attitude clear in the footnote at the top of galley 89.

If the Committee, however, still is unsatisfied with form of Table II, the word "alternative" may be stricken therefrom in every instance. In that case the wording of the paragraph descriptive of Table II, and also the footnote accompanying it, would need similar modification to make them harmonious with the Table II as revised.

3. We have selected these particular cities for comparison because (1) of their representative character and comparability in respect to population (one having a population of over two million, two having more than 600,000, one having approximately 500,000, one having approximately 400,000, and five having between 250,000 and 400,000); (2) because of their fair geographical distribution over the United States (other than the extreme south); and, (3) because of their availability and completeness of printed matter relating to the organization and administration of the high schools.

We believe, from our general knowledge of the situation, that the results of the comparisons of New York City with those ten cities are not strikingly and significantly different from what they would be had the comparisons been made, for example, with conditions in Philadelphia, Pittsburgh, San Francisco, Baltimore, Buffalo, St. Paul, Kansas City, Portland, Springfield, and Jersey City.

(Insert as a footnote to division II, galley 91).

4. In making the comparisons among the eleven cities we have in each instance employed the syllabi and printed courses of study of the latest issues available. In most cases these bear date of 1910 or 1911. In one or two instances the issue was for 1909 or earlier. The date of issue of the printed course of study ("General Course") used in re-

spect to the New York City system in 1908, but the regulations contained therein are, we have been assured by Assistant Superintendent Stevens, in complete operation at present (1912), except in so far as modifications have been noted by us in the appropriate places.

5. I have prepared two additional tables giving (1) the number of periods prescribed in each department in each city, and, (2) ranking the cities in respect to their inflexibility.

I do not know that these tables add much to the general argument, but neither do they seem to do any harm. In fact, for me, they make the case less meritorious for New York than it is without them. I am not sure that this is just what the Committee demands in its queries No. 7 and No. 13, but I think it is.

If these tables are to go in they ought to be numbered Table VIII and Table IX, respectively, and to follow in order on galley 94, just preceding the paragraph dealing with the present Table VIII. Moreover, if these two new tables are to be inserted, then present Table VIII and all the references pertaining to it must be changed to read Table X. There will also be need of an insertion of the new tables in the table of contents (galley 86).

(Insert the two tables here)

Table VIII shows the number of periods of prescribed work in each of the departments of study in each of the eleven cities compared.

TABLE VIII—DEPARTMENT PRESCRIPTIONS (IN PERIODS) FOR GRADUATION

<i>City.</i>	<i>Eng.</i>	<i>For. Lang.</i>	<i>Hist. Civics Economics.</i>	<i>Math.</i>	<i>Sci.</i>	<i>Total.</i>
Boston	13	7	3	4	3	30
Chicago	8	0	0	0	0	8
Cincinnati	16	10	4	9	5	44
Cleveland	15	20	5	10	0	50
Detroit	15	0	5	10	5	35
Indianapolis	15	0	0	5	5	25
Los Angeles	10	0	5	0	0	15
Milwaukee	0	0	0	0	0	0
Newark	14	0	5	10	5	34
New York	14	15	9	9	10	57
St. Louis	20	10	9½	10	10	59½

1. Ordinarily candidates for graduation in Milwaukee must have pursued ten periods of English, but it is possible to graduate from the "elective course" without such credit.

2. Newark prescribes some foreign language for graduation from all courses except the manual training course.

Table IX shows the rank of each of the eleven cities compared in respect to the amount of work prescribed in each subject, i. e., in respect to the inflexibility of administration.

TABLE IX—RANK OF THE ELEVEN CITIES IN RESPECT TO INFLEXIBILITY
Rank in amount of prescribed work in

City.	Eng.	For. Lang.	Hist. Civics Economics.	Math.	Sci.	Total.
St. Louis	1	3	1	1	1	7
New York	4	2	2	1	2	11
Cleveland	3	1	3	1	5	13
Cincinnati	3	3	4	2	3	14
Detroit	3	5	3	1	3	15
Newark	4	5	3	1	3	16
Indianapolis	3	5	6	3	3	20
Boston	5	4	5	4	4	22
Los Angeles ...	6	5	3	5	5	24
Chicago	7	5	6	5	5	28
Milwaukee	8	5	6	5	5	29

1. Wherever the same rank is accorded to two or more cities it is to be understood that the prescriptions are identical in amount.

From Table IX it is seen again that in the administration of the work in the high schools, New York City ranks very high (or low), if inflexibility is regarded as advantageous, both in respect to the various departments and also in respect to the aggregate number of counts.

6. I do not see the bearing of query No. 8, as I have set up no "standards" on galley 92.

7. I do not see the bearing of query No. 10 so far as it refers to galley 92, as it pretends to do. If the query were to apply to section III on galley 95 the reply would be as follows:

"In making a study of the actual administration of the general course in New York City data were secured through the following means: (1) Several consultations with Superintendent Maxwell and Associate Superintendent Stevens; (2) Several consultations with the head-masters and with associate teachers in the various high schools; (3) Personal inspection of the high school work covering a period of nearly two weeks; (4) Several conferences with members of various teachers' organizations of the high schools; and, (5) A detailed questionnaire sent to each head-master in the city.

8. Query No. 12 must have reference to table No. III on galley 89 and not to galley 93. If so the reply is:

By total periods are meant the entire number of "units" or recitation

hours extending over the entire course, or the aggregate of week-hours in any department of work for the entire four years. Work extending over only half a year is accorded one-half of the periods or work-hours that would be allotted if the work were to continue for the entire year.

9. Query No. 14 seems unnecessary. The topics to which reference is made appear only a few pages previous, and, if the report has been read in full, the subject-matter will be clearly in mind. However, the following footnote may, if desired, be inserted on galley 95 under each of the four sections respectively, namely: "See for details pp. —."

10. Query No. 15, seems not clear as I do not discuss the general course on galley 96.

11. In taking up query No. 16 the only reply that can be made is: There are no available statistics respecting the proportion of pupils in the two divisions mentioned here. It is a well-recognized fact to all high school administrators, however, that such a classification of pupils exists.

12. If the Committee on School Inquiry chooses to add to the expense of printing the report, the map showing the distances traversed by different pupils in New York City may be inserted. It will be interesting but not vital to the discussion made here. (See Query 17.)

13. In reply to query No. 18 I can only say I understood Mr. Thompson was to deal with the question of commercial education in all its phases, i. e., in the general course as well as in the special commercial courses. I have not seen Mr. Thompson's report, but feel that he has treated this topic somewhere. If not, then my sentence (paragraph 6, galley 102) should be modified slightly to conform to the facts.

14. My reply to query No. 19 is: "No, the expression 'industrial training' and 'manual training' are not used in the same senses. The former is vocational and technical; the latter is cultural and general."

15. Replying to query 20 I may say: The assertion that "most cities are providing technical schools rather than manual training schools" is true only in so far as those cities are seeking to supplement the work of manual training schools by means of technical schools. That is, in cities in which purely technical schools are being established with the aim of offering technical instruction in manual arts, general manual training courses are also found, the aim of which is general culture. We recommend that both aspects of the work be provided extensively in New York City.

Classification of Questions proffered in the letter of the Chairman of the Committee on School Inquiry, made by Dr. Calvin O. Davis pursuant to a letter from Prof. Paul H. Hanus, dated September 16, 1912.

(a) Immaterial questions of Mitchel's.

- | | | | |
|----|----------|-----|-----|
| 1. | Question | No. | 3. |
| 2. | " | " | 8. |
| 3. | " | " | 11. |
| 4. | " | " | 17. |
| 5. | " | " | 20. |
| 6. | " | " | 4. |
| 7. | " | " | 6. |

(b) Confusing.

1. Questions 7 and 13. (While I prefer two tables to satisfy these questions, I had to work without all data at hand, and errors may have crept in. Moreover, I really see little value in the tables, since the points are virtually covered in other tables.)
2. Question No. 9.
3. " " 15.

(c) Already answered.

- | | | | |
|----|----------|-----|--|
| 1. | Question | No. | 5 (referring to the dates of syllabi). |
| 2. | " | " | 12. |
| 3. | " | " | 14. |
| 4. | " | " | 19. |
| 5. | " | " | 2. |

(d) Requiring further investigation.

1. Question No. 16.

(e) Worthy of consideration.

1. Question No. 1. Would have been corrected without suggestion from Comm.
2. Question No. 10. So far as it refers to galley 95, not galley 92.
3. Question No. 18. Omit reference to Thompson. Would have been done without suggestion from Comm.

REPORT ON
EDUCATIONAL ASPECTS OF THE
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY
OF THE BOARD OF ESTIMATE
AND APPORTIONMENT

PART II

Subdivision III

High Schools

SECTION A.—“COURSES” (PROGRAMS) OF STUDY, EXCEPT
COMMERCIAL COURSES

BY

CALVIN O. DAVIS, PH.D.

Assistant Professor of Education, Inspector of High Schools,
University of Michigan, Ann Arbor, Mich.

CITY OF NEW YORK
1911-1912

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"COURSES"¹ (PROGRAMS) OF STUDY IN THE HIGH SCHOOLS (EXCLUSIVE OF COMMERCIAL COURSES)

Introductory

The accompanying table (Table I, pp. 226-7, and 228) shows the program of studies, or the entire instruction offered by the high schools of New York City. It also indicates the organization of the subject matter within the authorized parallel courses and gives brief explanatory notes pertaining to these courses. The program is administered by twenty separate high schools, and twenty-one "annexes" or branches. The courses are grouped under two main divisions, namely: First, the general course, and, second, special courses. The analysis and discussions will follow in order.

I—The "General Course" in New York City²

1. In What Schools it is Found

The general course of four years' length is the most common and fundamental course provided. It is found in seventeen high schools, namely: De Witt Clinton (boys), Wadleigh (girls), and Washington Irving (girls), in the Borough of Manhattan; Morris (boys and girls), in the Borough of The Bronx; the Boys' High School, the Girls' High School, Manual Training (boys and girls), Eastern District (boys and girls), Erasmus Hall (boys and girls), and Bushwick, in the Borough of Brooklyn; Bryant, Newtown, Flushing, Far Rockaway, Jamaica, and Richmond Hill (each for boys and girls), in the Borough of Queens; and Curtis (boys and girls), in the Borough of Richmond.

¹ We are using the terminology adopted by the Committee on College Entrance Requirements: "Three distinct terms seem to be needed: (1) *Program of studies*, which includes all of the studies offered in a given school; (2) *curriculum*, which means the group of studies schematically arranged for any pupil or set of pupils; (3) *course of study*, which means the quantity, quality, and method of the work in any given subject of instruction." (Report, p. 42.) Throughout this report, whenever we refer specifically to the general course or special courses in New York City, we shall use the nomenclature used in New York City, but shall use them in the sense of curriculum. In speaking of "a group of subjects schematically arranged," in general, we shall use the term, curriculum.

² The course of study used in these analyses is the one issued in 1908.

	Courses							
	General	Training Schools Preparatory	Girls' Technical, 3 Yrs.	Girls' Library	Boys' Manual Training, Industrial and Technical ³	Girls' Manual Training ³	Commercial, ³ 3 Yrs.	Commercial, ³ 4 Yrs. (3th Yr. Post-Graduate)
N. Y. City High School Program of Studies Prescribed Studies.....black Alternatives.....bracketed Electives.....bold face See Explanatory Notes	I II III IV	I II III IV	I II III	I II III IV	I II III IV	I II III IV	I II III	I II III IV V
NATURAL SCIENCES:	5 .. 4-4	5 .. 4-4	.. ..	.. ..	.. ..	5 .. 4-4	3	3
Biology, Elem.....	.. .. 4-4	.. .. 4-4	.. ..	.. ..	.. ..	.. .. 4-4	.. ..	.. ..
Botany, Adv.....	.. .. 4-4	.. .. 4-4	.. ..	.. ..	.. ..	.. .. 4-4	.. ..	.. ..
Zoology, Adv.....	.. .. 5-5	.. .. 5-5	.. ..	.. ..	.. ..	.. .. 5-5	.. ..	.. ..
Chemistry, Elem. and Adv.....	.. .. 5-5	.. .. 5-5	.. ..	.. ..	.. ..	.. .. 5-5	.. ..	.. ..
Industrial Chemistry.....	.. .. 5-5	.. .. 5-5	.. ..	.. ..	.. ..	.. .. 5-5	.. ..	.. ..
Physics, Elem. and Adv.....	.. .. 4-4	.. .. 4-4	.. ..	.. ..	.. ..	.. .. 4-4	.. ..	.. ..
Appl. Mechanics, Steam, Electr.....	.. .. 4-4	.. .. 4-4	.. ..	.. ..	.. ..	.. .. 4-4	.. ..	.. ..
Physiology.....	.. .. 4-4	.. .. 4-4	.. ..	.. ..	.. ..	.. .. 4-4	.. ..	.. ..
INDUSTRIAL, BOYS:	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Wood Joinery, Cabinet Making, etc.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Turning, Pattern Making (Dry.....)	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Forging, Tool Making.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Machine Shop.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Building Construction.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
INDUSTRIAL, GIRLS:	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Cooking.....	.. .. 4-3	.. .. 4-3	.. ..	.. ..	.. ..	.. .. 4-3	.. ..	.. ..
Sewing, Dressmaking.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Millinery.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Library Economy.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
COMMERCIAL:	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Business Practice, Penmanship, Arithmetic, etc.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Stenography, El. and Adv.....	.. .. 4-3	.. .. 4-3	.. ..	.. ..	.. ..	.. .. 4-3	.. ..	.. ..
Typewriting, El. and Adv.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Bookkeeping, Business Forms, Office Practice, Correspondence.....	.. .. 3-3	.. .. 3-3	.. ..	.. ..	.. ..	.. .. 3-3	.. ..	.. ..
Accounts, Accounting and Auditing.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Commercial Geography.....	.. .. 3-3	.. .. 3-3	.. ..	.. ..	.. ..	.. .. 3-3	.. ..	.. ..
Commercial Law.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Business Organization.....	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
MUSIC.....	1 1 1 1	1 1 1 1	1 (1) (1)	1 1 1	1 1	1 1 1 1	1 1 1	1 1 1 1

COURSES

N. Y. City High School, Program of Studies Prescribed Studies, black Alternatives, bracketed Electives, bold face See Explanatory Notes	COURSES							Commercial, 4 Yrs. (5th Yr. Post- Graduate)
	General	Training Schools Preparatory	Girls' Technical, 3 Yrs.	Girls' Library	Boys' Manual Training, Industrial and Technical ³	Girls' Manual Training ²	Commercial, 3 Yrs.	
	I II III IV	I II III IV	I II III	I II III IV	I II III IV	I II III IV	I II III	I II III IV V
DRAWING:								
Elem. Design and Representation.	2 2	2 2 1 1	2 [2]	2	2	2 1 1	2 2	2
Design.	1 1	1 1	19 21	1	1	1	1	1
Representation.	1 1	1 1	1	1	1	1	1	1
Free Hand.	1 1	1 1	1	1	1	1	1	1
Mechanical.	1 1	1 1	1	1	1	1	1	1
Architectural.	1 1	1 1	1	1	1	1	1	1
PHYSICAL TRAINING, HYGIENE.	2 2 2 2	2 2 2 2	2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2	2 2 2 2
ASSEMBLY.	1 1 1 1	1 1 1 1	1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1	1 1 1 1
TOTAL REQUIREMENT, Each Student	26 30 30 30	26 30 30 30	26 30 30	26 26 30 30	29 30 30 29	26 21 14	25 26 26	26 26 26 26

EXPLANATORY NOTES

1. *Black figures* indicate periods of recitation per week in required subjects.
Bracketed figures indicate periods of recitation per week in alternative subjects, one of which must be chosen (e. g., in the General Course, one of three languages).
Bracketed figures [] indicate a second group of alternative subjects, one of which must be chosen (e. g., in the General Course either History, Science and Home or Modern L.).
Boldface figures indicate electives, from among which enough must be chosen to make up the required number of points.
Figures connected by a dash indicate that a subject may be taken in an upper and a lower year; not that there is an advanced course in the subject.
Requirements for graduation.
In the General Course, and in the Training School Preparatory Course, 150 points are required as a full term's work.
In other courses, as indicated in the footings of each column.
In courses beginning a Foreign Language must continue it for two years, and are advised to continue it longer, rather than to begin another.
2. *Languages.*—Pupils beginning a Foreign Language must continue it for two years, and are advised to continue it longer, rather than to begin another.
3. *Differentiation.*—In Commercial and Technical Courses, general subjects like English, History, Mathematics, and Science are somewhat modified in accordance with the main interest of the course.
4. With principal's approval a boy preparing for college may substitute an academic subject for machine shop practice in the fourth year.
† With Commercial Law and Civics.

NEW YORK HIGH SCHOOLS—GROUPED BY SEX OF PUPILS

BOYS ONLY		GIRLS ONLY		BOYS AND GIRLS	
1. De Witt Clinton. (Manhattan)	1. Wadleigh. (Manhattan)	1. Morris. (Bronx)	7. Newtown. (Queens)		
2. H. S. of Commerce	2. Washington Irving. (Brooklyn)	2. Erasmus Hall. (Brooklyn)	8. Flushing.		
3. Suvesant. (Brooklyn)	3. Girls. (Brooklyn)	3. Eastern District.	9. Far Rockaway.		
4. Boys.	4. Commercial.	4. Bushwick.	10. Jamaica.		
5. Commercial.		5. Bryant. (Queens)	11. Richmond Hill.		
		6. Bryant. (Queens)	12. Curtis. (Richmond)		

2. Analyzed by Years

First Year.—In the first year the work is entirely prescribed¹ for all students and consists of the following subjects: English (5);² a foreign language (Latin, German, or French) (5); algebra (5); biology (5); music (1); drawing (2); physical training (2); and elocution (1). This gives a total of twenty-six periods per week—twenty periods of work requiring preparation outside the class, and six not requiring such preparation.

Second Year.—In the second year, English (3); the same foreign language (5); plane geometry (4); ancient history (3) or "Modern History to 1066" (3); music (1); drawing (2); and physical training (2) are prescribed for all students. This is a total of twenty periods per week, fifteen of which require preparation outside of class recitations. In addition, each pupil is expected to elect one other subject from the following list: Latin (5);³ German (5);³ French (5);³ Greek (5); Italian (5); Spanish (5); physiography (4); chemistry (5); domestic science (4); elocution (1). Thus 75 per cent. of the work is prescribed and 25 per cent. is elective.

Third Year.—In the third year, English (3); the same foreign language which was begun in the first year (5); "History of England" (2) or "Modern History since 1066" (2); and physical training (2) are the subjects prescribed for all. This is a total of ten periods of work which requires preparation. The elective subjects are: Latin (5); German (5); French (5); Greek (4); Italian (4); Spanish (4); advanced algebra (2); plane geometry (2); stenography and typewriting (4); bookkeeping (3); economics (3); advanced botany (4); advanced zoölogy (4); physics (5); music (1); drawing (2); elocution (1); and any subject scheduled for the second year and not already elected and passed. It is seen that if the unprepared work in physical training be omitted from consideration the prescribed subjects for this year aggregate 50 per cent. of the work every pupil is normally expected to carry. If the prescription in physical training be included, the percentage is 54.54 per cent.

Fourth Year.—In the fourth year, English (3); American history and civics (4); and physical training (2) are the prescribed subjects. That is, in this year, the prescribed work (not including physical training) aggregates seven periods, or 35 per cent. of the amount usually pursued by each pupil. The subjects open to individual election are the continued courses of each of the foreign languages previously mentioned

¹ While pupils do exercise a choice of language from among Latin, German, and French, in the first year, a language is really a prescription within the foreign language department, and is so treated throughout this report.

² The figures in parenthesis following the name of a subject indicate the number of class exercises per week.

³ Since Latin or German or French is prescribed for this year, the choice here lies between the two languages not already begun in the first year.

(no foreign language may be begun in this year); additional and supplementary courses in English (3), Latin (3), and Greek (3); advanced mathematics (4); advanced stenography and typewriting (3); commercial law and commercial geography (3); mediæval and modern history (3); music (1); drawing (2); elocution (1); and any subjects scheduled for the second and third years which have not already been elected and passed.

Table II shows the per cent. of work by years, prescribed,¹ alternative, and elective in the general course. Subjects² requiring no preparation outside the class exercises are not included in this computation. Twenty periods per week are taken as a base throughout the four years.

Table II—Per Cent. of Prescribed, Alternative, and Elective Work

First year.....	{ Prescribed	100%
	{ Alternative .....	..
	{ Elective .....	..
Second year.....	{ Prescribed	75%
	{ Alternative	25%
	{ Elective .....	..
Third year.....	{ Prescribed	50%
	{ Alternative .....	..
	{ Elective	50%
Fourth year.....	{ Prescribed	35%
	{ Alternative .....	..
	{ Elective	65%

Table III shows the total offerings in periods per week in each of the separate departments of study found in the general course in New York City, the number of periods prescribed for graduation in each of these departments, and the relation in per cent. which the prescribed work bears to the total offerings.

Table III—Department Offerings and Prescriptions (Total)

	No. of Periods Offered	No. of Periods Pre- scribed for Graduation	Per cent. of Work Prescribed
English	17	14	82.35
Foreign Language	102	15	14.70
History, Civics, and Economics	15	9	60.00
Mathematics	17	9	52.94
Natural Science	27	10	37.03
Music	4	2	50.00
Drawing	8	4	50.00
Elocution	4	1	25.00
Physical Training	8	8	100.00

¹ A prescribed subject is one required of all students; an alternative subject is one which has to be taken from a group of two or three different subjects; and an elective subject is one which is taken from a group of subjects without restrictions.

² These include elocution, physical training, drawing, and music.

3. Analyzed by Departments

Under this heading, the offering in each department of the general course of study will be considered from the standpoint of (1) scope or range of subject matter; (2) intensiveness or thoroughness of attack; and (3) flexibility or adaptation to the varying needs of different districts, classes, and individuals.

a. English.

The offering in English (excluding elocution) comprises four years' work of the usual character, and an additional or supplementary elective course in the fourth year. This last course is designed primarily to meet the needs of pupils planning to enter colleges whose entrance requirements in English are not fully satisfied by the work of the regular four years' course. With the exception of the work of the first year, three periods per week are assigned to each of these courses. Elocution is assigned one period per week throughout the entire four years, but is prescribed in the first year only. The total offering in English, therefore, equals twenty-one periods. If elocution be omitted from consideration (inasmuch as, in many cities, it is regarded as a subject requiring only a minimum of preparation, if any, outside the class exercise), the total offering equals seventeen periods. Of these seventeen periods, fourteen are prescribed for all candidates for graduation. If elocution be included the total amount of prescribed work aggregates fifteen periods. Thus, it is seen, 71.4 per cent. of the total offering in English and elocution is prescribed and 28.6 per cent. is elective. If elocution be excluded,¹ the prescribed work in English constitutes 82.35 per cent. of the total offering, and the elective work, 17.65 per cent.

While in scope, intensiveness, and flexibility the offering does not differ markedly from the practice in many other cities, the time allotment is, on the whole, less generous than seems desirable, and the distribution of the periods assigned for the subject not wholly satisfactory.² The work seems congested in the first and fourth years, where 60 per cent. more periods of instruction are provided than in the second and third years. Some flexibility is secured to pupils by permitting four periods of elective work in the fourth year and one period of elective work in the second and third years. Flexibility is unduly restricted, however, by the limitations in scope.³

¹ Except in the first year, elocution is an elective subject, and, in further analyses, will be treated separately from English.

² A recent provision of the Board of Superintendents (February 1st, 1912) permits the course in fourth year English to be given four periods per week. Since, however, the compilations for this portion of the report were completed before that date, that provision is not included in our analyses and table.

³ Further criticisms and constructive suggestions respecting the work in English, as well as respecting the provisions for all other work in the program of studies, are made in a later section of this report (see pp. 265 ff.).

b. Foreign Languages.

Of the foreign languages, Latin, German, and French are offered for four years each, and Greek, Italian, and Spanish for three years each. An additional course in Latin and another in Greek are provided in the fourth year. Latin, German, and French are assigned five periods per week during the first three years and four periods in the fourth year. Greek, Spanish, and Italian may be begun not earlier than the second year, and are assigned five periods per week during that year, and four periods per week thereafter. The supplementary courses in Greek and Latin in the fourth year are assigned three periods each, and are designed primarily to equip students more thoroughly for college. Thus the regular offering in Latin, French, and German is nineteen periods each, and in Greek, Italian, and Spanish thirteen periods each. Pupils desiring to secure more intensive instruction in Greek and Latin than the regular courses provide may obtain three additional periods of work in each.

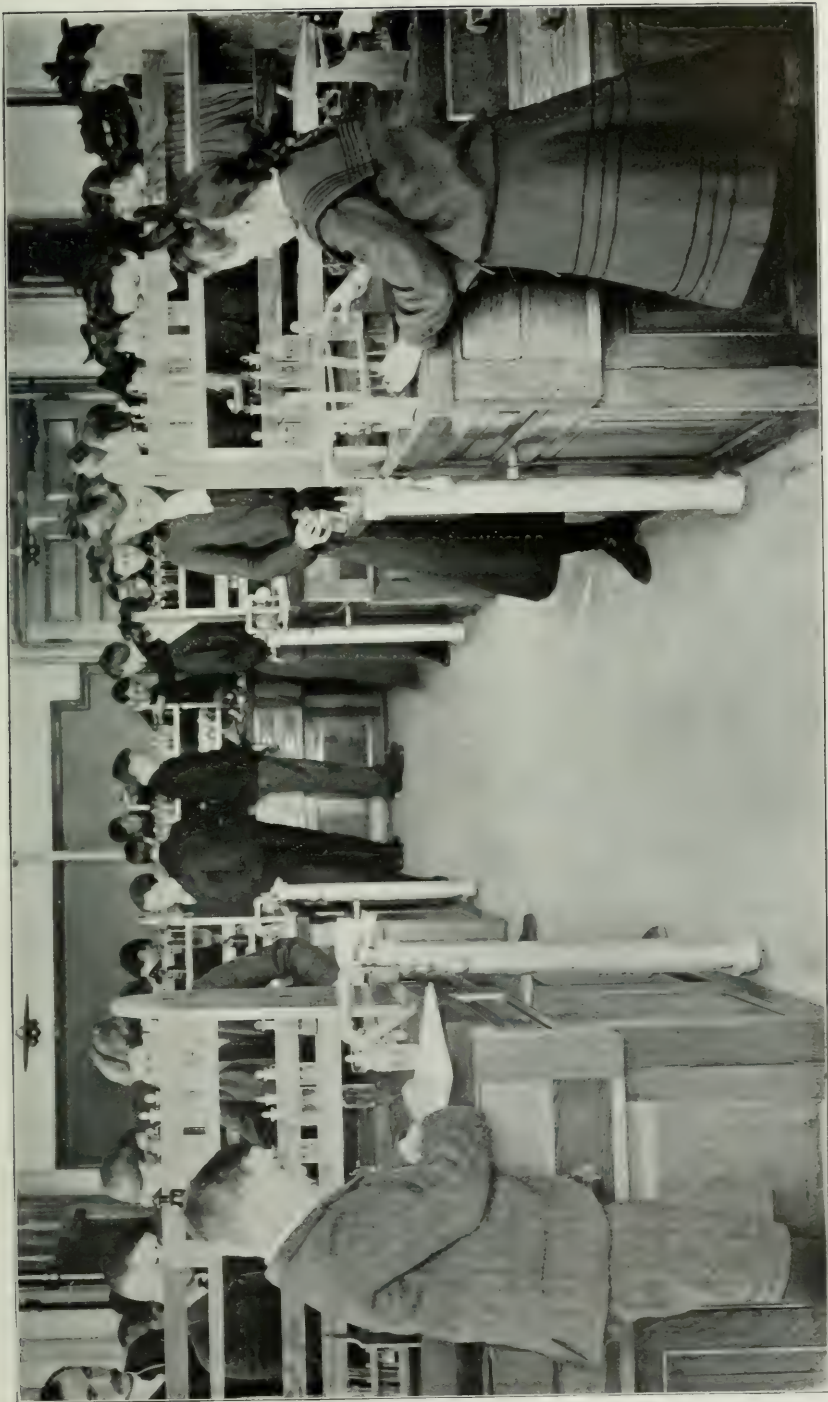
Summarizing, it will be seen that New York City makes a minimum offering of ninety-six periods per week, and a maximum offering of 102 periods of instruction in foreign languages.

Of the six foreign languages, no particular one is absolutely prescribed. However, candidates for graduation must have credit for three years' work in some one foreign language, and, except for reasons of health, no pupil is expected to omit foreign language from his curriculum during the first three years in the high school. He may, however, choose between Latin, French, and German. Thus, of the total amount of foreign language work offered, 44.1 per cent. is in the alternative group, and 55.9 per cent. in the elective. Since, in reality, three years' work in the alternative group is prescribed, the per cents. really are: prescribed work, 14.70 per cent., and elective, 85.30 per cent.

c. History, Civics, and Economics.

In this group of studies are found ancient, mediæval and modern, English, and United States history,¹ and civics and economics. Ancient history, mediæval and modern history, and economics are each offered three periods per week. English history is assigned but two periods per week, and American history and civics combined, four periods. This gives a total offering in this department of fifteen periods, of which nine are prescribed for graduation. These are: three in ancient history in

¹ The order and organization of the courses in history have been recently modified by the approval by the Board of Education of a syllabus adopted by the Board of Superintendents (December, 1910). This new syllabus is gradually supplanting the old, but, since it is not (January, 1912) in complete operation in any school, the discussions respecting history in this report are based on the older syllabi. The new syllabus prescribes "Modern History, Part I (down to the year 1066)" in the second year; "Modern History, Part II (European history since 1066)" in the third year; and United States history and civics in the fourth year. In the fourth year, also, an elective course in ancient history is offered.



CHEMISTRY CLASS IN MORRIS HIGH SCHOOL, BRONX.

In the second high school year the study of chemistry is pursued for five periods per week.



the second year; two in English history in the third year; and four in United States history and civics in the fourth year. Thus, in this department, 60 per cent. of the work is prescribed and 40 per cent. is elective.

d. Mathematics.

The offerings in mathematics consist of a total of seventeen periods of work distributed over the entire four years. In the first year elementary algebra for five periods, and in the second year plane geometry for four periods, are prescribed for all. In the third year two elective courses in mathematics are provided, each being assigned but two periods per week. These courses are (1) elementary algebra, review and advanced, and (2) plane geometry, review and advanced. In the fourth year the course in "advanced mathematics" consists of solid geometry and trigonometry, to which are assigned four periods per week. Thus, of the total offering, 52.94 per cent. is prescribed and 37.03 per cent. is elective.

e. Natural Science.¹

The offerings in natural science include the following subjects: Biology, chemistry, physics, physiography, advanced botany, and advanced zoölogy. Biology, with five periods per week, is a prescribed subject for all pupils in the first year. In the second year chemistry, with five periods per week, and physiography with four periods, constitute the offerings. In the third year physics, with five periods per week, advanced botany, with four periods, and advanced zoölogy, with four periods, are offered. No additional courses in natural science are found in the fourth year, but pupils of this year are permitted to elect any course listed for the third and fourth years, provided it has not already been completed. The total offerings, therefore, in natural science equal twenty-seven periods per week. Of these biology constitutes the only nominal prescription. Inasmuch, however, as New York City has accepted, as the standard for graduation, the requirements of the State Department of Education, and these requirements include a year's work in science besides biology, an additional year's course in this department is in reality prescribed for all. Thus, the nominal amount of instruction prescribed in natural science is 18.51 per cent. of the total offering; the actual amount is approximately double that per cent.—the exact figures depending on whether a pupil elects a science which is assigned four or five periods per week.

¹ Throughout this division of the report, the expression "natural science" is employed to designate both physical and biological sciences. The expression, therefore, includes physics, chemistry, physiology, physiography, biology, botany, zoölogy, geology, and astronomy.

f. Industrial Work.

The general course in New York City is particularly weak in industrial work. No courses of this kind whatever are provided for boys, and the offering for girls is limited to a single elective course in cooking, which is assigned only three or four periods per week in the second or fourth years.

g. Commercial Work.

An elementary course in stenography and typewriting is offered in the third year, and an advanced course in these subjects is provided in the fourth year. In the third year, too, a course in bookkeeping is found, and in the fourth year a composite course in commercial geography and commercial law. The elementary course in stenography and typewriting is assigned four periods per week. All the other courses are assigned three periods. The total offering, therefore, in this department aggregates thirteen periods. All the work is elective.

h. Music, Drawing, and Physical Training.

Music, drawing, and physical training are offered throughout the four years. Music is assigned one period per week, drawing and physical training are each assigned two periods. The entire four years' offering in physical training and the first two years' work in both drawing and music are prescribed for all. Thus, the total offering in music equals four periods; in drawing eight periods; and in physical training eight periods. Fifty per cent. of the offering in the first two subjects is prescribed for all, and 100 per cent. of the offering in physical training is prescribed.

4. General Regulations¹

"1. A period shall not exceed fifty minutes.

"2. No new class in an elective subject need be formed in the second year for less than twenty-five pupils; in the third year for less than twenty pupils; in the fourth year for less than fifteen pupils.

"3. Students following this course shall present for graduation the satisfactory completion of the required work, and shall be given credit for the number of points indicated upon the satisfactory completion of each subject. The requirement for graduation shall be the satisfactory completion of work aggregating 150 points, and the passing of such examinations as shall be set. Examination ratings secured by students who have completed this course of study in the examinations for admission set by approved colleges and universities, may be accepted for graduation from high school and entered upon the pupil's record, provided

¹ These regulations are quoted verbatim from the printed announcements of the Board of Education.



COOKING ROOM IN WADLEIGH HIGH SCHOOL.

In the general high school course in New York City a single elective course in cooking is assigned for three or four periods per week in the second or fourth years.

they are ratings obtained in subjects of the last high school year, and after said pupil has satisfactorily completed the high school course of study and the work of the freshman year. Elections may be made from other subjects, so far as possible, in the order indicated. Students who are preparing for college will make elections in accordance with the admission requirements of the college to which admission is sought. Students who are applicants for admission to training schools are required to present, in addition to subjects starred, Music III and IV, Drawing III and IV, and Science III.

"The number of points to be given to a subject is determined as follows: For subjects not requiring preparation, points equal hours per week. For subjects requiring preparation, points equal twice the number of hours per week.

"This rule may be applied to bookkeeping and stenography, as indicated, if necessary.

"4. In any terms a student shall be considered as having satisfactorily completed a subject when he has received a final term mark of 60 per cent. For every ten points obtained with a mark of 80 per cent. or over, the student shall be entitled to one additional point.

"5. Students shall be classified according to the number of points obtained, twenty points being regarded as a full term's work. A deficiency of five points may be allowed, provided that such deficiency is removed before another advance in classification is made. At the close of the summer vacation, and at such other time as it may be feasible, students shall be given an opportunity to remove deficiencies in class work by an examination to be set by the principal.

"6. Not more than six years shall be allowed for completing the work of the course. And any student who has reached the age of sixteen years and who has not attained, at the end of three years, two years' credit shall be dropped from the roll and discharged, unless the failure to secure the credits called for has been caused by prolonged illness or other reasonable cause.

"7. All ratings and records shall be made at least twice a term. The ratings shall be made by combining the teacher's estimate of the pupil's proficiency, based upon frequent memoranda, with the results of such tests as may be given under the direction of the principal during the regular recitation periods, and without previous announcement. The ratings at the end of the term shall summarize the previous ratings and shall represent the pupil's standing for the term. The students' records shall be made in figures, but reports to parents may be expressed in figures or letters. Equivalents: A=85 to 100; B plus=70 to 84; B=60 to 69; C=50 to 59; D=below 50.

"8. When the interests of a pupil demand it, the principal may modify the program of such pupil or permit him to follow a special program."

II—The "General Course" in New York City Compared with the General Courses in Ten Representative Cities—Boston, Chicago, Cincinnati, Cleveland, Detroit, Indianapolis, Los Angeles, Milwaukee, Newark, and St. Louis.

Introductory

In order to determine to what extent the organization and administration of the general course in New York City coincide with the organization and administration of the general course throughout the country, an analytical study has been made of the general courses of study as printed by the ten cities enumerated above. In making the comparisons only such features of the respective systems have been selected as are clearly of a corresponding character. Because practices in New York City coincide with practices elsewhere, or differ noticeably from those practices, it does not, of course, necessarily follow that the practices in New York City are either inferior or superior. Whether they are or not will be considered in another section of this report (see pp. 248 ff.).

A detailed analysis of the courses of study found in each of the ten cities would be too extended to include in this report. The working papers of such analyses have been filed with the Committee on School Inquiry. We have presented here only a somewhat detailed summary of the results obtained from those analyses.

1. In What Form the Courses are Found

Each of the high school systems which have been analyzed provides either (1) a general course or (2) a series of parallel courses, all aiming to give a general training supplemented by considerable intensified instruction in one or more particular fields, or (3) one or more general high schools organized to enable students to secure a wide range of instruction in such departments as the individual tastes, aptitudes, and ambitions of each pupil may require. In providing a general course in seventeen of the twenty high schools, New York City is, therefore, in accord with the common practices elsewhere in the United States.

2. Scope or Range of Subject Matter

The scope or range of the work offered in the general courses of the general high schools of the cities compared varies noticeably. Each provides the conventional academic branches—English, foreign languages, history, civics, economics, mathematics, and natural science.¹ Most of the general courses also contain offerings in music, physical training, drawing, and elocution, oral expression, or public speaking. The most striking differences are found in respect to the newer and so-

¹ See note at bottom of page 233 for the meaning of this phrase.

called more practical subjects, and in respect to intensified courses and also simplified informational or "appreciation courses" within the fields of the older conventional subjects. Thus manual training, cooking, sewing, applied art, various commercial branches, industrial and commercial aspects of history and geography, and differentiated¹ courses in English, science, and mathematics are found in practically all ten of the cities here considered.

In comparison with the offerings in the ten cities analyzed, the scope of the general course in New York City is decidedly narrow. Indeed, in respect to the newer and more practical subjects, the course in New York City is in the stage of organization which is already outgrown by most other cities. Neither does New York City provide differentiated work in the older conventional subjects commensurate with that work in the other cities.

Of the ten city systems analyzed, nine provide two or more years' work in manual training in every general course or general high school. New York City makes no provision whatever for work of this kind in the general course, and confines the special courses of this character to four high schools, namely: Stuyvesant in Manhattan, Manual Training and Bushwick in Brooklyn, and Bryant in Queens.

Seven cities also provide two or more years' work in cooking, sewing, and applied art² for girls in all of their general courses or general high schools, while the other three cities offer these subjects in one or more of their general high schools. New York City provides, in the general course, a single year's offering in domestic science. This consists wholly of a course in cooking, and is restricted to those schools in which "facilities" for teaching the subject are provided—except that elementary sewing is taught in four schools and that dressmaking and millinery are offered for girls in the Manual Training High School in Brooklyn. The high schools in which cooking is actually taught—nine in number—are: Wadleigh, Washington Irving, Morris, Girls', Manual Training, Eastern District, Bryant, Newtown, and Far Rockaway.

As to commercial work in the general course in the seventeen high schools, New York City provides nominally two years of stenography and typewriting and one year each of (1) bookkeeping, (2) economics, and (3) commercial law and commercial geography. Actually economics is taught in but two schools, namely: DeWitt Clinton and Erasmus Hall; bookkeeping in but five schools, namely: Newtown, Flushing, Far Rockaway, Richmond Hill, and Curtis; and commercial law and commercial

¹The expression "differentiated courses" is employed to include (1) simplified informational or "appreciation courses" designed to give a very general acquaintance with particular fields of knowledge; (2) specialized and intensified courses, aiming to give a more thorough training than the regular courses in those subjects permit; and (3) courses in which the vocational aspects are most prominent. That is to say, they are courses lying in the same department, but differing from each other in aims, content, and methods of presentation.

²"Applied Art" is quite generally used to mean work in drawing applied to domestic, industrial, and commercial designing and decoration.

geography in three schools, namely: Far Rockaway, Richmond Hill, and Curtis. In contrast with these provisions, it has been found that eight of the other cities here compared offer commercial work in excess of twenty periods in every general course or general high school, and that six of these eight cities provide more than thirty periods. Cincinnati and Cleveland are the only cities that provide fewer periods than New York City.¹

Italian is not found as an offering in any one of the ten cities under consideration, but, inasmuch as the subject is not actually taught in a single high school in New York City, the difference in scope in this respect is nominal and not real.

There are other variations in scope or range of subject matter of the general course which are not common to all the cities, but are found in several of them. Some of these variations are significant. Among the subjects provided in some of the cities and not offered in New York City are the following: Debating; dramatics; commercial and industrial history; economic geography; astronomy; geology; mineralogy; analytical geometry; calculus; natural history; history of music; musical composition; musical harmony; history of art and architecture; psychology; ethics; home architecture and sanitation; home nursing; household management, laundry, and sanitation; dietetics; metal working; pottery making; and military drill.

The branches offered in New York City and not provided in many of the other cities are: English history as a separate subject, and advanced or supplementary courses in Greek and Latin.

3. Intensiveness of Attack (Total Time Allotment in Periods per Week)

A comparison of the degrees of intensiveness with which the work in New York City and in the ten other cities is pursued reveals some notable similarities and differences. The discussion by departments follows:

English.—Seven of the ten cities under consideration offer more work in English in the aggregate than New York, and three offer less. The most usual number of periods per week accorded to the courses in English is five—six of the ten cities studied making this number the uniform standard throughout each of the four years. One other city assigns five periods per week during the first two years, but assigns a smaller number of periods to the work of the last two years. Boston is unique in that five periods per week are prescribed for the first year in all schools, but thereafter the principal of each school is authorized, with the consent of the Board of Superintendents, to assign four or five periods per week during the second year, and three, four, or five periods per week in the third and fourth years. Only two cities—New-

¹For a full analysis of the commercial work in New York City, see Assistant Superintendent Thompson's report.

ark and Cincinnati—assign four periods per week throughout the entire four years, and no city except Boston, as noted, and Cleveland assigns fewer than four periods per week in any year. In Cleveland three periods per week are assigned the course in the third year, but, in addition, one period per week is prescribed in "Oratory." The aggregate number of periods of work in English is, therefore, really four. In the fourth year Cleveland assigns two periods only to English.

In comparison with the practice elsewhere, therefore, the work in English in New York City lacks intensiveness.

Foreign Languages.—Latin and German, in practically every high school system, extend through four years and are assigned five periods per week. In several cities French is pursued with the same intensiveness, though in some schools it extends through only three years. Greek is usually offered, if offered at all, for three years, and is assigned five periods per week. Spanish is found in six of the cities and is offered usually for two years, with four or five periods per week. Italian is found only in the New York City course of study.

Thus, in the intensiveness of the foreign languages, New York City is seen to differ little, if any, from the other cities; in the aggregate amount of foreign language instruction offered, however, New York City exceeds every other city.

History, Civics, and Economics.—In history, civics, and economics New York City is considerably at variance with the common practice elsewhere. Almost without exception the ten cities whose courses have been analyzed provide four years of work or more in this department, and, with rare exceptions, the time allotment is five periods per week to each course. In no instance are only two periods per week devoted to any course as in New York City, and in only two cities are courses found with a time allotment of three periods per week. In these two cities, moreover, the assignment of three periods per week is confined to one or two courses, the other courses being assigned four or five periods.

In comparison with the practice elsewhere, therefore, the omission in New York City of all work in history in the first year, and the assignment of only two or three periods per week to each course, except American history and civics, make the work superficial. Eight of the ten cities exceed the aggregate offering in New York City, one equals it, and only one is exceeded by it.

Mathematics.—In respect to the intensiveness of the offering in mathematics, seven cities provide more periods of work in this department than New York City, and two provide fewer periods. In nearly every system, however, five periods per week are devoted to each course during the first three years, and from three to five periods in the last year. No city assigns fewer than three periods per week to any course, except that Cleveland assigns two periods to a single course in "advanced mathematics," offered in the fourth year. In most of the ten cities, too,

algebra occupies the attention of the first year; geometry the second; and advanced algebra and geometry the third.

It is to be observed, therefore, that New York City, in providing courses that are assigned only two periods per week, finds little support in other parts of the country. Neither is the elementary course in plane geometry as intensive in New York City as similar courses elsewhere, nor the aggregate offering as large as in a majority of the other cities.

Natural Science.—In respect to the aggregate offering in natural science, New York City takes middle ground among the other cities, providing fewer periods in the aggregate than five cities, but more periods than the other five cities. In the intensiveness, however, with which nearly every separate course is pursued, New York City ranks below practically every other city, since the common practice in all but one of the ten cities is to devote not fewer than five periods per week to each course. In many cities the allotted time, counting the laboratory periods, is greater than five periods. Several cities also provide courses in astronomy and geology, and a few offer courses in advanced physics and chemistry. Astronomy and geology are usually pursued for a single term each, and are assigned five periods per week. The advanced courses in physics and chemistry usually extend through the entire fourth year and are assigned four or five periods per week.

The only approach New York City makes to providing advanced work of this type are courses in advanced botany and advanced zoölogy, each of which is assigned four periods per week.

Commercial Subjects.—In commercial work eight of the ten cities exceed the offering in New York City, and, in most cases, by more than 50 per cent. Almost without exception, all courses in commercial branches offered in the general high schools in the ten cities compared are assigned five periods per week. In a few instances the allotment is four periods, but in no case is it fewer than four. Moreover, the aggregate number of periods devoted to commercial subjects in seven of the ten cities is in excess of twenty periods.

In comparison with the intensiveness with which commercial branches are pursued in the general course elsewhere, the New York City offering of a total of thirteen periods distributed among four courses is obviously not commensurate with general practice.

Industrial Subjects.—(a) For Boys.—Wherever industrial subjects for boys are offered in the general course in the ten cities compared, the work is assigned four or five periods per week, and extends through not less than two years. As has been stated elsewhere (p. 234), New York City makes no provision whatever in the general course for work of this kind, and, hence, furnishes no basis for comparison. (b) For Girls.—Wherever industrial subjects for girls are offered in the general courses in the ten cities compared, the work is assigned four or five periods per week. Practically every course, moreover, extends through an entire year, and the total number of periods assigned to this department is



GYMNASIUM WORK IN WADLEIGH HIGH SCHOOL.



HIGH SCHOOL SWIMMING CLASS.

The swimming period is held in one of the city pools.

never fewer than eight, and usually exceeds twelve periods. By comparison, therefore, the offering in New York City of four periods in domestic science is indeed small.

Oral Expression.—Nearly every one of the ten cities compared provides some kind of instruction in oral expression as a subject separate and distinct from the regular courses in English. There is, however, no uniformity of title employed to denote this type of work. "Elocution," "Oral English," "Oral Expression," "Oratory," "Debating," and "Dramatics" are terms used to indicate the courses. As a rule, these courses are assigned one or two periods per week, and are offered for one or two years. In a few cities the work extends over four years.

New York City, in providing one period per week for four years in this subject, is, therefore, assigning approximately as much time to the work as other cities.

Music.—Music in New York City is offered once per week throughout the four years. This is in keeping with the more usual practices elsewhere, though a few cities—notably Boston, Los Angeles, and Chicago—provide considerably more work than this. The history of music, musical harmony, musical composition, and counterpoint are among the intensified courses found in these cities, each course being offered for an entire year, and (except in Boston) being assigned five periods per week.

Drawing.—In practically all ten of the cities compared drawing is provided throughout the four years. The intensiveness with which it is pursued, however, is far from uniform. In a few instances the courses are assigned five periods per week; in several cases the assignment is four periods per week; but by far the most usual practice is to assign two or three periods per week.

New York City, therefore, in providing two periods per week in drawing throughout the four years, differs but little from the practice in a majority of the other cities.

Physical Training.—Practically all of the ten cities compared make some provision for giving systematic physical training, but in only a few instances do the printed announcements indicate the intensiveness of the work. Wherever such announcements are definite the practices do not materially differ from the practices in New York City.

Table IV shows the total number of periods of work provided in the general courses in each of the several departments in the respective cities:

Table IV—Intensiveness of Attack

	No. of Periods in English	No. of Periods in Foreign Languages	No. of Periods in History, Civics and Economics	No. of Periods in Mathe- matics	No. of Periods in Natural Science	No. of Periods in Commercial Work
New York.....	17	102	15	17	27	13
Boston.....	20	90	25	20	40	35
Chicago.....	16	100	27½	17	38	51
Cincinnati.....	16	71	13	18	25	0
Cleveland.....	25	60	19	15	31	10
Detroit.....	36	82½	21	24	28	52
Indianapolis.....	20	70	25	20	20	30
Los Angeles.....	20	90	80	25	49	45
Milwaukee.....	20	60	22½	20	25	25
Newark.....	16	70	23	15½	23	21
St. Louis.....	20	95	15	18	25	40

From this table it is seen New York City offers fewer periods of work in English than do seven cities, but more periods than do three cities; that in foreign languages New York City leads all the other cities; that in the department of history, civics, and economics only two other cities provide so few periods as New York City; that in mathematics seven cities offer a larger number of periods than New York City and two provide fewer periods; that in natural science New York City stands exactly in the middle of the list of cities; and, finally, that in commercial subjects, with two exceptions, New York City provides fewer periods than any other city.

Summarizing, it is seen that, on the whole, the offering in New York City is pursued with less intensiveness than is the offering elsewhere in respect to English; history, civics and economics; mathematics; natural science; commercial subjects; industrial subjects for both boys and girls; and music; but with equal or greater intensiveness in respect to foreign languages; drawing; oral expression; and physical training.

4. Flexibility

In general, the general course in New York City is much more rigidly administered than is the general course in the other ten cities with which it has been compared. This lack of flexibility shows prominently, whether the comparisons be made respecting (a) the amount of prescribed work of the total amount of work required for graduation, (b) the amount prescribed in the various departments of instruction, or (c) the amount prescribed for each year in the course. The tables found in the following pages make these differences clear.

Table V shows the relative rank of the eleven cities with respect to

the per cent. of prescribed work¹ of the total amount of work required for graduation:

Table V—Prescriptions for Graduation²

	Per Cent.		Per Cent.
St. Louis	75.00	Newark	38.16
New York	70.10	Indianapolis	31.25
Cleveland	62.50	Los Angeles	18.75
Cincinnati	61.11	Chicago	10.00
Detroit	47.22	Milwaukee	0.00
Boston	46.87		

It is seen from this table that only one city—St. Louis—ranks above New York City in the rigidity of the administration of the general course of study. The average per cent. of prescriptions in the ten cities, other than New York City, is 39.09 per cent. New York City prescribes 70.1 per cent. of all its offerings. It is evident that the greater the amount of work that is prescribed the less opportunity each pupil has to elect subjects in accordance with his peculiar individual tastes and needs. Hence, in comparison with the other cities, New York City is seen to administer the general course with less regard to the special interests and aptitudes of the students in the schools than any other city of our list save one.³

Table VI shows the distribution of the prescribed work among the several departments of study:

¹ Prescriptions in music, drawing, physical training, and elocution are excluded from the computations, inasmuch as these subjects usually demand little or no preparation outside the class exercises. Neither are the requirements for graduation from "commercial" courses taken into account, since, in the majority of the cities, such requirements are not fairly comparable with the prescriptions for students in other courses. This explanation applies also to Tables VI, VII, and VIII, following.

² The basis for these percentages is the total number of recitation periods or credits prescribed in work requiring preparation outside of the class exercises as compared with the total number of recitation periods or credits required for graduation.

³ If the prescribed work in subjects not requiring preparation outside the class exercises is included in the analysis, the showing of New York City is even less commendable. On a basis of that kind, the percentage of prescribed work is not 70.1 per cent., but 79.33 per cent., being equaled by the percentage in no other city.

Table VI—Prescriptions by Departments

City	English	Foreign Language	History, Civics, and Economics	Mathematics	Natural Science	Total
St. Louis ¹	25.00%	12.50%	12.50%	12.50%	12.50%	75.00%
New York ²	17.20	18.44	11.07	11.07	12.30	70.10
Cleveland ¹	18.75	25.00	6.25	12.50	0.00	62.50
Cincinnati ³	22.22	13.89	5.56	12.50	6.94	61.11
Detroit ³	20.83	0.00	5.56	13.89	6.94	47.22
Boston ⁴	20.31	10.94	4.69	6.25	4.69	46.87
Newark ⁵	18.42	0.00 ⁶	0.00 ⁷	13.15	6.57	38.16
Indianapolis ¹	18.75	0.00	0.00	6.25	6.25	31.25
Los Angeles ¹	12.50	0.00	6.25	0.00	0.00	18.75
Chicago ¹	10.00	0.00	0.00	0.00	0.00	10.00
Milwaukee ¹	0.00 ⁸	0.00	0.00	0.00	0.00	0.00

¹. Eighty recitation periods taken as the requirement for graduation.

². Eighty-one and one-third periods taken as the requirement for graduation.

³. Seventy-two recitation periods taken as the requirement for graduation.

⁴. Sixty-four recitation periods taken as the requirement for graduation.

⁵. Seventy-six recitation periods taken as the requirement for graduation.

⁶. Newark prescribes a foreign language in the college preparatory course and the general course, but not in the manual training course.

⁷. Newark prescribes a year of history in the college preparatory course and the general course, but not in the manual training course.

⁸. Ordinarily candidates for graduation in Milwaukee must have pursued a minimum of work in English, but it is possible to graduate from the "elective course" without such study.

From this table it will be seen that, of the 70.1 per cent. of prescribed work required for graduation in New York City, 17.2 per cent. is in English; 18.44 per cent. in foreign languages; 11.07 per cent. in history, civics, and economics; 11.07 per cent. in mathematics, and 12.3 per cent. in natural science. By noting the distributions for the other cities it will be seen also that New York City prescribes a smaller per cent. of work in English than any other city, except Los Angeles, Chicago, and Milwaukee; that in the foreign languages only one other city, namely, Cleveland, prescribes as large a per cent. of work as New York City, and that only five cities of the eleven prescribe any work whatever in this department; that in history, civics, and economics the per cent. of prescriptions in St. Louis alone exceeds that of New York City, and that four cities make no prescriptions whatever in these fields; that in mathematics New York City stands exactly in the middle of the list of cities, five prescribing a larger per cent. of work and five a smaller per cent.; and, finally, that in natural science the prescriptions in New York City and St. Louis are practically the same, but that both these cities prescribe approximately 100 per cent. more work in this department than any of the other cities. It is to be noted further that three cities make no prescriptions whatever in mathematics, and four cities make no prescriptions in science.

Of course, whether a city shall be considered as ranking high or low on the basis of the facts revealed in the above comparative tabulations depends upon one's conception of the aim of the given school or

course, and the educational principles that have been adopted as a guide in the administration of that school or course. Consideration will be given to these topics in a later section of this report.

Table VII shows the per cent. of prescribed work in each department in respect to the total offering in that department.¹

Table VII—Prescriptions in Each Department in Respect to the Total Departmental Offering

Cities	English	Foreign Language	History, Civics, and Economics	Mathematics	Natural Science
St. Louis.....	100.00%	10.25%	62.50%	55.50%	40.00%
New York.....	82.35	14.70	60.00	52.93	37.03
Cleveland.....	60.00	33.33	26.31	66.66	none
Cincinnati.....	100.00	14.08	30.80	50.00	20.00
Detroit.....	41.66	none	23.81	41.66	17.85
Boston.....	65.00	7.77	12.00	20.00	7.50
Newark.....	87.50	none absolutely ²	21.74	64.51	21.74
Indianapolis.....	75.00	none	none absolutely ²	25.00	25.00
Los Angeles.....	50.00	none	6.25	none	none
Chicago.....	50.00	none	none	none	none
Milwaukee.....	none absolutely ²	none	none	none	none

*Ordinarily a pupil is expected to take courses in this subject, but may be graduated without having done so.

From Table VII it is seen that New York City prescribes 82.35 per cent. of the total offering in English; 14.70 per cent. of the total offering in foreign languages; 60 per cent. of the total offering in history, civics, and economics; 52.93 per cent. of the total offering in mathematics; and 37.03 per cent. of the total offering in natural science. A further analysis of the table shows that three cities prescribe a greater per cent. of their offering in English than does New York City; one alone prescribes a greater per cent. of its offering in foreign languages; one a greater per cent. of its offering in history, civics, and economics; three a greater per cent. of their offering in mathematics; and one a greater per cent. of its offering in natural science.

Thus, it appears again that the administration of the general course in New York City is much more rigid than it is in practically any of the ten cities. Not only is a relatively larger amount of work prescribed for every department, as is shown in Table VI, but Table VII shows that the opportunity for pupils to select, within the several departments,

¹Table VII differs from Table VI in this, namely: Table VI gives the amount of prescribed work in each department compared with the total amount of work prescribed for graduation; Table VII gives the amount of prescribed work in each department compared with the total offering in that particular department only.

courses according to their own judgment and desires is narrow and restricted.

Table VIII shows the number of periods of prescribed work in each of the departments of study in each of the eleven cities compared:

Table VIII—Department Prescriptions (in Periods) for Graduation

City	English	Foreign Languages	History, Civics, and Economics	Mathematics	Science	Total
Boston.....	13	7	3	4	3	30
Chicago.....	8	0	0	0	0	8
Cincinnati.....	16	10	4	9	5	44
Cleveland.....	15	20	5	10	0	50
Detroit.....	15	0	5	10	5	35
Indianapolis.....	15	0	0	5	5	25
Los Angeles.....	10	0	5	0	0	15
Milwaukee ¹	0	0	0	0	0	0
Newark ²	14	0	5	10	5	34
New York.....	14	15	9	9	10	57
St. Louis.....	20	10	9½	10	10	59½

¹ Ordinarily candidates for graduation in Milwaukee must have pursued ten periods of English, but it is possible to graduate from the "elective course" without such credit.

² Newark prescribes some foreign language for graduation from all courses except the manual training course.

Table IX shows the rank of each of the eleven cities compared in respect to the amount of work prescribed in each subject, i. e., in respect to the inflexibility of administration:

Table IX—Ranking of the Eleven Cities in Respect to Inflexibility³

City	Ranking in Amount of Prescribed Work in					Total Counts
	English	Foreign Languages	History, Civics, and Economics	Mathematics	Science	
St. Louis.....	1	3	1	1	1	7
New York.....	4	2	2	1	2	11
Cleveland.....	3	1	3	1	5	13
Cincinnati.....	2	3	4	2	3	14
Detroit.....	3	5	3	1	3	15
Newark.....	4	5	3	1	3	16
Indianapolis.....	3	5	6	3	3	20
Boston.....	5	4	5	4	4	22
Los Angeles.....	6	5	3	5	5	24
Chicago.....	7	5	6	5	5	28
Milwaukee.....	8	5	6	5	5	29

³ Wherever the same rank is accorded to two or more cities it is to be understood that the prescriptions are identical in amount.

From Table IX it is seen again that in the administration of the work in the high schools, New York City ranks high in inflexibility, both in respect to the various departments and also in respect to the aggregate number of counts.

Table X shows the per cent. of work prescribed in each of the four years in each of the eleven cities:

Table X—Prescriptions for Graduation by Years

1st Year	2nd Year	3rd Year	4th Year
NEW YORK... 100.00%	Cincinnati... 77.77%	St. Louis.... 75.00%	St. Louis.... 75.00%
St. Louis.... 75.00	NEW YORK... 75.00	Detroit..... 55.55	NEW YORK... 35.00
Cleveland.... 75.00	St. Louis.... 75.00	NEW YORK... 50.00	Cleveland... 35.00
Cincinnati... 72.22	Cleveland.... 75.00	Newark..... 47.37	Cincinnati... 22.22
Detroit..... 55.55	Newark..... 47.37	Cleveland.... 40.00	Newark..... 10.50
Indianapolis... 50.00	Detroit..... 27.70	Indianapolis. 25.00	Detroit..... 0.00
Newark..... 47.37	Boston..... 25.00	Cincinnati... 22.22	Boston..... 0.00
Boston..... 25.00	Los Angeles. 25.00	Boston..... 18.75	Indianapolis. 0.00
Los Angeles... 25.00	Indianapolis. 25.00	Los Angeles.. 0.00	Los Angeles.. 0.00
Chicago..... 10.00	Chicago..... 10.00	Chicago..... 0.00	Chicago..... 0.00
Milwaukee.... 0.00	Milwaukee... 0.00	Milwaukee... 0.00	Milwaukee... 0.00

From the table it is seen that New York City allows individual pupils no choice whatever in selecting their courses in the first year. Every offering is prescribed for all.¹ In this respect New York City stands alone, no other city prescribing work in excess of 75 per cent. of the amount assigned for this year, and five cities prescribing less than 50 per cent.

In the second year Cincinnati holds first place in respect to the prescriptions for all students, while New York City, St. Louis, and Cleveland each prescribes 75 per cent. of the work. It should be observed, however, that seven cities prescribe for this year less than 50 per cent. of the work of each pupil, and that five of these cities prescribe not more than 25 per cent.

In the third year New York City ranks third in the list, being surpassed by St. Louis and Detroit. In this year New York City prescribes 50 per cent. of the standard amount of work; two cities prescribe between 40 per cent. and 50 per cent.; three cities prescribe between 18 per cent. and 25 per cent.; and three cities make no absolute prescriptions whatever.

In the fourth year New York City and Cleveland are tied for second place, each prescribing 35 per cent. of each pupil's work, while St. Louis outranks all the cities, with a prescription of 75 per cent. of the

¹ As indicated elsewhere (p. 229) a pupil does have the alternative choice of Latin, German, or French. Since, however, these subjects lie within the single department of foreign languages, we have, in all cases, treated this alternative choice as being in reality a prescription in this department.

work. Cincinnati and Newark prescribe, respectively, 22.22 per cent. and 10.5 per cent., while six cities make no absolute prescriptions whatever for this year.

Thus it is clear again that the rigidity of the administration of the general course in New York City is far greater than in a majority of the other cities we have compared. Or, to state the same fact differently, in making the work of each year flexible, and hence more adaptable to the peculiar needs of individual pupils, New York City ranks below nine-tenths of the other ten cities. In the first year New York City stands at the bottom of the list; in the second year next to the bottom; in the third third from the bottom, and in the fourth second from the bottom.

We find, therefore, in summarizing that, in respect to the scope of the work offered in the general course, the intensiveness with which many studies are pursued, and the flexibility with which the work is administered, New York City ranks markedly below the majority of other cities with which it has been compared.

III—The Actual Administration of the "General Course" in New York City¹

Introductory

The foregoing analyses and comparisons of the general courses in the high schools of the ten cities considered were based on the latest available printed documents issued by the respective boards of education. To what extent the actual practices in the ten cities correspond to and coincide with the printed announcements material at our disposal does not reveal. Nor was it feasible to attempt to determine the details of administrative practice in those cities. In New York City, however, it was possible to ascertain what divergencies, if any, from the printed outlines are found in actual practice. These divergencies are numerous, and, in some instances, very great. The following discussion seeks to make such variations clear.

¹In making a study of the actual administration of the general course in New York City, data were secured through the following means: (1) Several consultations with Superintendent Maxwell and Associate Superintendent Stevens; (2) Several consultations with the head-masters and with associate teachers in the various high schools; (3) Personal inspection of the high school work covering a period of nearly two weeks; (4) Several conferences with members of various teachers' organizations of the high schools; and (5) a detailed questionnaire sent to each head-master in the city.

1. In the First Year

The work of the first year of the general course is fixed and uniform throughout the seventeen high schools in which the course is found. Twenty-six periods of the same prescribed work are provided for all. In each school these are distributed over the eight departments of English, elocution, foreign languages, mathematics, biology, music, drawing, and physical training, in exact conformity with the printed course of study. The work differs in scope, kind, and intensiveness for the various sections of the city, the various abilities of pupils, the various aims and interests of individuals *only in so far* as the methods of individual teachers differ, or the independence and ingenuity of principals in interpreting technical uniform rules are exercised. In rare cases during this year Rule 8 of the "General Regulations" (see p. 235) is allowed to operate, and pupils physically weak or having other reasons acceptable to the principal are permitted to deviate more or less from the uniform prescription. The departures are, however, *within* the restricted fields laid out, and are in the interest of *minimized* work, not *different* work. Substitutions of courses unprovided for in the printed course of study are found in only one school, the Wadleigh High School, and are being offered there only as tentative experiments.

In this year the only possible authorized differentiation of work is the alternative choice of a foreign language, the field being restricted, however, to Latin, German, and French. Moreover, as the program is actually administered in many of the schools, even this limited freedom of election is denied. Elementary school principals, through their advice to the students about to enter high schools, determine to a great extent which language shall be chosen. If, perchance, a few pupils, knowing definitely their wants and the reasons therefor, ignore the advice and elect the foreign language not advised, the principal of the high school selected may take his stand on the rule¹ respecting the minimum size of classes (sections), and require the pupils to elect a different language. In consequence of these practices, continued for some time, traditions have been established within some of the schools, and it has become the accepted unwritten law that first year pupils entering these schools shall pursue a single definitely predetermined foreign language. Thus, for example, no foreign language other than Latin is taught to first year pupils in the Erasmus Hall High School. Young people, who may perchance live within a block of that school, must, therefore, take Latin as the first year required foreign language, or secure their schooling in some other school. Again, in the Morris High School, not till the February-June term, 1912, has the number of students electing French in the first year been sufficiently large to make the formation of a section profitable. Nor can it be doubted that, had the principal of this school been so minded, he could, through advice and pressure, have

¹ Rule 2. See p. 234.

so reduced the number of such elections as to make provision for the class (section) unnecessary or impossible. In one of the "annexes" of this same school both Latin and French have been entirely eliminated from the course. Hence, pupils entering this particular "annex" are required to take German.

The question here is not concerning the wisdom or unwisdom of these practices. That aspect will be discussed later. The point is that in some schools the real course of study for the first year does not coincide with the nominal course of study.

2. In the Second Year

The printed course for this year provides that Greek, Italian, Spanish, domestic science for girls, chemistry, and physiography shall constitute the subjects open to untrammelled election. The actual situation is as follows:

In 1910-1911 Greek was actually taught in nine out of the seventeen high schools offering the general course, but the number of pupils pursuing the subject was few in each school. In consequence, this year (1911-1912), by order of the Board of Superintendents, Greek has been confined to seven schools. In the other ten schools it is, therefore, only a nominal and not a real elective.

Italian is not actually taught in a single school in the city. Its inclusion, therefore, in the course of study is purely nominal for this year as well as for other years.

Spanish is actually taught in but three schools having the general course, namely: The DeWitt Clinton, Newtown, and Bryant. Its appearance as a free elective is, therefore, misleading, since the long distances within New York City and the expense of travel render a subject which is offered in but few schools practically unavailable for all save those residing near the school or on direct car lines.

"Domestic Science I," which in New York City means instruction in cooking only, is announced as offered only in those schools which are provided with a kitchen. In consequence, there are but nine high schools offering such instruction, two being in Manhattan, one in The Bronx, three in Brooklyn, and three in Queens. There are, therefore, six other high schools attended by girls which do not provide an offering of this kind.

When, therefore, the course of study for the second year is viewed in the light of the actual offering, it is seen to be considerably less extensive in scope than one would be led to believe from the printed course. Moreover, inasmuch as English, a continuation of the foreign language begun in the first year, mathematics, history, drawing, music, and physical training are prescribed for all in this year, the only elective subjects open to boys are virtually chemistry, physiography, and a second foreign language (Latin, French, or German). Girls in nine schools have the addi-

tional choice of cooking. Since, however, physiography is prescribed for admission to the city training schools, and many of the girls are preparing for those schools, physiography for hundreds is virtually transferred from the elective column to the prescribed column. Thus the six elective subjects indicated in the printed course of study are really reduced to not more than four in any school, and to less than four in most schools.

3. In the Third Year

In the third year the same limitations hold as in the second year in respect to Greek, Italian, and Spanish. "Music III" and "Drawing III" are electives (save for candidates for the city training schools), but, since each is offered but one period per week, they are not so important in this discussion as other subjects. "Mathematics IV, Plane Geometry, Review and Advanced," is, in several of the schools, withdrawn as an offering this year, and given as an additional period in connection with "Mathematics II" of the second year. Physics is a prescribed study for candidates for the training schools and for admission to many colleges. Moreover, the regents prescribe for graduation one science, and will not accept biology as that science. Hence physics, or chemistry, or physiography, or advanced botany, or advanced zoölogy becomes a required subject for all. Economics is taught in but two schools having the general course, and bookkeeping in but five schools. Hence these subjects are not generally available. Thus the elective offering of the third year of professed thirty-nine periods virtually shrinks by about one-third. The only subjects that are generally available for individual choice are a foreign language (5) (Latin, German, or French); physics (5); intermediate algebra (2); stenography and typewriting (4); advanced botany (4); advanced zoölogy (4), and, as before stated, music (1) and drawing (1).

4. In the Fourth Year

As in the preceding years, the lack of availability of work in Greek, Italian, and Spanish continues. "Latin V" (additional and supplementary Latin) is taught in only three schools, and "Greek IV" (additional and supplementary Greek) in only a single school. "English V" (additional and supplementary English) is taught as a distinct course in but two schools. In a few schools the regular prescribed work in English for the year (English IV), which is assigned three periods per week in the course of study, is increased in intensiveness to four or five hours per week by adding to it an extra hour or two taken from the optional course—"English V." The same is true in rare instances respecting "Latin IV" and "Latin V." Neither practice is common, however. Hence, the supplementary courses thus provided on paper play a very small part in the actual work of the schools. "Science VI, Physiography," which is announced in the printed course as being an elective

subject in this year, is precisely the same course as that offered in the second year. If taken then, of course, it becomes no longer a possible elective for the senior. The same is true of chemistry, which is offered in the second year; of the advanced courses in botany and zoölogy which are provided in the third year; and "Domestic Science I," which is the same as the course in domestic science offered in the second year. Commercial law is actually taught in but three schools; "History IV (medieval and modern)" is actually taught in but three schools. Music and drawing, required here only for the candidates for the training schools, and meeting but once per week, need not be given particular attention.

Thus, giving to the course for the fourth year the most liberal interpretation possible, for the majority of students of New York City the availability of the subjects that they believe will best serve their individual needs is limited to the following offerings: (1) A fourth year's study in foreign language; (2) a third or second year's study in one or two other foreign languages; (3) physiography or other science not already passed; (4) advanced mathematics; (5) stenography and typewriting; (6) music and drawing.

If, however, pupils have not already begun a second foreign language or do not desire to pursue the first foreign language beyond the term of three years prescribed, and if such pupils have already elected and passed physiography and chemistry (one of which they will almost of necessity have been obliged to take, unless they have, at the beginning of the second year, elected a second foreign language), the scope of available material for them is meager indeed. In fact, such material is limited for them in most of the schools to advanced mathematics, advanced botany and zoölogy, commercial branches, and drawing and music. That is to say, the nominal electives open to seniors according to the official course of study aggregate seventy periods per week. The *actual available subjects* open to the senior student *with linguistic tastes* aggregate in most schools thirty-eight periods. This includes all work available, though much of it would undoubtedly not be adapted to the needs of a student of this type. The *actual available subjects* open to the senior student *without linguistic tastes*, and who, in consequence, would naturally elect chemistry in the second year rather than a second foreign language, would aggregate, in most schools, only twenty-two periods, and would include, in general, besides the science work, advanced mathematics, typewriting and stenography, drawing, and music, some of which would certainly not particularly meet his needs.

Thus, it is apparent that in scope or range of subject matter the general course in New York City as actually administered is in reality decidedly more narrow than the printed announcements indicate, and that, as a consequence, the opportunity for pupils to elect work that is adapted to their special needs and interests is restricted to an amount considerably less than the small maximum which the printed course of study sets forth.

On the other hand, in the actual administration of the course a greater intensiveness in a few subjects is secured than the printed announcement indicates. In a number of schools in the city plane geometry of the second year is given five periods instead of four; English history of the third year is given three periods instead of two; and English of the fourth year is allotted four periods instead of three. In other respects, however, the nominal and the real assignments of periods to the different subjects coincide.

IV—The "Special Courses" in New York City

1. Girls' Technical Course

(1) In What Schools It is Found

The Washington Irving and Bryant High Schools offer special technical courses for girls. With the exception of the course for library assistants, which is four years, these special courses are three years in length.

(2) Analyzed by Years

First Year.—In the first year the work is prescribed for all students as follows: English (5);¹ commercial arithmetic (5); German or French or Spanish or technical work of the second year (5); drawing (2); domestic science and art (5); physical training, including physiology and hygiene (2); music (1), and declamation and voice training (1). This makes a total of twenty-six periods of work, 80.8 per cent. of which is prescribed and 19.2 per cent. alternative between a language and technical work.

Second Year.—In the second year a portion of the work is prescribed, but, in addition to such work, each pupil is permitted to elect a "group" of studies selected from several "groups," each "group" being organized to meet the vocational needs of a different set of students. The required work for all but those preparing to be library assistants is: English (5); physical training (2); music (1); declamation and voice training (1); and drawing (2). In the cases of students who are specializing in commercial work or designing, the modern language chosen in the first year may be continued during the second and third years as an alternative for music, declamation, and drawing.

The groups from which a pupil elects one group are as follows:

Group I (Stenographers and Typewriters).—Stenography, typewriting, bookkeeping, penmanship, spelling, and office practice—nineteen periods.

Group II (Dressmakers and Embroiderers).—Sewing, drafting, fit-

¹ The figures in parenthesis, following the name of the subject, indicate the number of class exercises per week.

ting, study of materials, textiles, color, form, and design—nineteen periods.

Group III (Milliners).—Millinery, study of materials, trimming, frame-making, color, form, and design—nineteen periods.

Group IV (Designers).—Design, still life, plants, casts, composition, picture study, history of ornament, textiles, interior decoration, draperies, costume design, book covers, illustrating, lettering—nineteen periods.

Group V (Library Assistants).—The course in which this group constitutes the offering for the second year differs from the other technical courses in that it is four years in length instead of three. It also differs in being somewhat more closely allied to the general course than are the other technical courses. The prescribed work in this course in the second year is as follows: English (5); ancient history (3); geometry (4); German, French, Latin, or Spanish (two to be elected) (10); physical training (2); music (1); declamation and voice training (1)—twenty-six periods. No elective work is authorized for this year.

Third Year.—In the third and last year of all the technical courses (except the course for library assistants) the prescribed work is as follows: English (5); physical training (2); music (1); elocution (1). (If the language chosen in the first year is continued until the third year, music and elocution are not required.) The elective "groups" in this year are as follows:

Group I, as in second year, with commercial law and civics—twenty-one periods.

Group II, as in second year—twenty-one periods.

Group III, as in second year—twenty-one periods.

Group IV, as in second year—twenty-one periods.

Group V, course for library assistants: English (5); a foreign language (4); history of England (3); physical training (2); music (1); library economy (15)—thirty periods.

Fourth Year.—The course for library assistants continues through a fourth year as follows: English (5); a foreign language (4); American history and civics (4); library economy (12); physical training (2); mediæval and modern history, or additional library work (3)—thirty periods.

(3) Analyzed by Departments

a. *English.*—English is offered five periods per week throughout the three-year and the four-year courses, and is a required subject. In the three-year course elocution is required in the first year, and is alternative in the second and third. In the four-year course it is required in the first and second year and is not offered during the third and fourth years. From this it will be seen (1) that in the three years' course 88.9 per cent. of the work in English is required, and 11.1 per cent. is alternative with other subjects, and (2) that, in the four-year course, 100 per

cent. of the work is prescribed. In respect to intensiveness the instruction is adequate.

Compared with the offering in English in the general course, therefore, it is seen that one more period is prescribed during the first three years than is prescribed for the entire four years in the general course. In the course for library assistants 42.85 per cent. more work in English is offered than in the general course. Moreover, each of the courses in English, except the course of the first year, is pursued with considerably more intensiveness than the corresponding courses in the general course. The work, however, differs not at all in kind and content from the work in English in the general course.

b. *Foreign Languages*.—In the three-year course the work in language is alternative with technical work, no foreign language being absolutely required. French, German, and Spanish are offered during the three years, and, with five periods per week, the work ought to be sufficiently intensive.

In the girls' library course Latin is offered, as well as French, German, and Spanish, and all of the work is alternative. In this course, however, after the first year, two foreign languages are required, the work being assigned five periods per week during the first two years and four periods the last two years. This arrangement for foreign languages seems adequate for the purpose; it is sufficiently extensive in scope, is intensive enough for the purposes for which it is designed, and is flexible enough in administration to afford each pupil the opportunity to obtain that work which will best serve her needs.

In the course for library assistants the prescribed work in foreign languages is in excess of the work required in the general course; in all the other technical "groups" there is greater individual choice permitted.

c. *History, Civics, and Economics*.—No work in history, civics, and economics is offered pupils in the three-year course—an unwise omission. In the library assistant's course ancient history, three periods per week; English history, three periods, and United States history and civics, four periods, are required. Mediæval and modern history is an alternative subject offered three periods per week. In this course thirteen periods per week of historical instruction are offered, of which 76.9 per cent. is required and 13.1 per cent. is alternative.

Compared with the offering in the general course, therefore, the provisions for the pupils in the three-year course are much less generous. The prescriptions for pupils in the four-year course are precisely the same as those for pupils of the general course.

d. *Mathematics*.—Commercial arithmetic is prescribed for all students five periods per week in the first year. No other work in mathematics is offered in the three-year course. In the library assistant's course plane geometry is prescribed in the second year, which, with commercial arithmetic, constitutes the entire offering in mathematics in this course. There is no flexibility in either of the courses.

e. *Natural Science*.—No work is offered in natural science in either one of these "groups."

f. *Technical Subjects*.—Technical subjects are made available for all pupils after the first year, and for all students, except those preparing to become stenographers, typewriters, or library assistants, a minimum of such work is made optional even in the first year in place of foreign languages. The technical subjects include commercial work, dressmaking, millinery, designing, and library work. In the first year the amount of available technical work aggregates five periods, or 19.2 per cent. of the standard requirements for that year. In the second year nineteen periods of technical work are prescribed for all students (except those in the course for library assistants), and in the third year twenty-one periods of such work are prescribed. The prescriptions for each of these years, however, lie within alternative groups of subjects, and hence, by the arrangement, a pupil is afforded an opportunity to elect a line of work which is best adapted to her peculiar needs.

In the course for library assistants fifteen periods in library economy are prescribed for the third year. In the fourth year three additional periods in technical library work are provided as an alternative for three periods in mediæval and modern history.

g. *Music, Drawing, and Physical Education*.—One period of music is prescribed in the first year of the three-year course, and in the first three years of the four-year course. In the second and third years of the three-year course one period per week is made alternative.

Two periods of drawing are prescribed in the first year of both the three-year course and the four-year course. In the second year of the three-year course two additional periods of drawing are made alternative.

Two periods of physical training are prescribed each year throughout each course.

(4) General Regulations ¹

1. "A period shall not exceed fifty minutes."
2. "Physical culture and music shall not be regarded as subjects requiring preparation."
3. "Certificates will be awarded to those who satisfactorily complete this course."

2. Manual Training Course for Girls

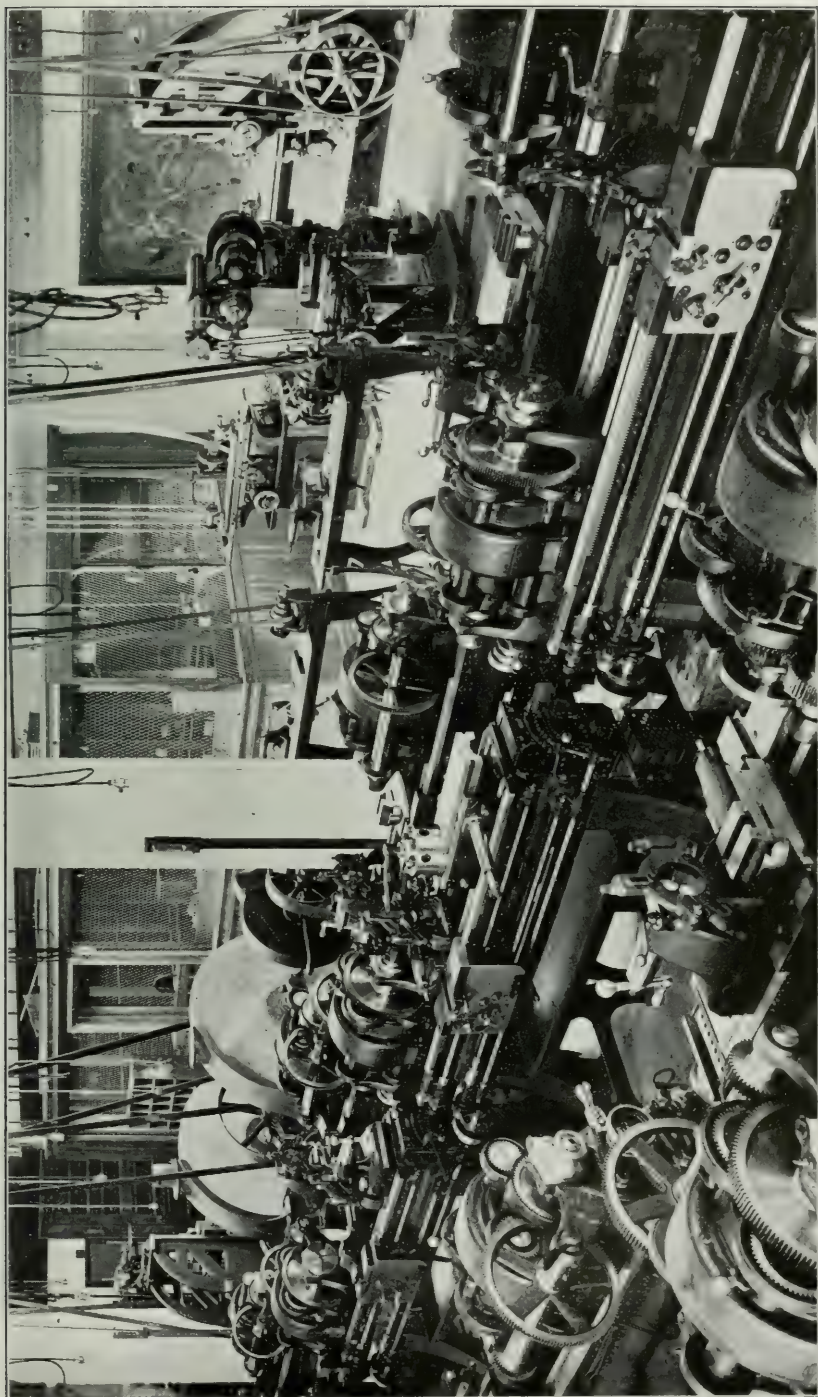
In a circular issued by the Department of Education, giving information relative to courses in the high schools, a "Manual Training Course of Four Years for Girls" is announced. The announcement contains the information that, "in the Manual Training and Bushwick High Schools, Brooklyn," such a course is offered "with electives in sewing, cooking, millinery, etc., in the second, third, and fourth years." ²

¹ These regulations are copied verbatim from the printed course of study.

² From a circular issued by the Department of Education, New York City.



MACHINE SHOP IN STUYVESANT HIGH SCHOOL, MANHATTAN.



MACHINE SHOP IN MANUAL TRAINING HIGH SCHOOL, BROOKLYN.



A study of this course shows that it is identical with the "General Course of Study" except in the matter of "industrial work for girls." Whereas the general course offers a year's work in cooking in either the second or fourth years, the "manual training course for girls" offers a year of sewing and dressmaking, four periods per week, during the second year; a year of cooking, four periods per week, and a year of millinery, three periods, both in the third year; and further work to the extent of four periods in sewing and dressmaking in the fourth year. All of this work is elective. From this analysis it is clear that this manual training course for girls is in reality the general course into which have been introduced eleven additional periods of domestic arts work.

3. Manual Training, Industrial and Technical Courses for Boys

(1) In What Schools They are Found

"Manual training, industrial and technical courses of four years are offered to boys in the following high schools: Stuyvesant, Manhattan; Manual Training, Brooklyn; Bushwick, Brooklyn; Bryant, Queens. The manual training course prepares for admission to colleges, schools of engineering, and professional schools. The industrial or technical course offers opportunities for special work in woods and metals and in machine shop practice, and is intended for boys who will enter high grade manufacturing establishments directly from school."¹

(2) Analyzed by Years

In the first year of this course English (5), elocution (1), algebra (5), freehand and mechanical drawing (4), music (1), physical education (2), and joinery (6) are prescribed. German (5) or French (5) or Latin (5) are offered as alternative subjects (one of three languages being required). Physiology and hygiene (as required by law) are prescribed for the equivalent of four lessons a week for ten weeks. The prescribed subjects, therefore, constitute 82.8 per cent. of the total offering, and the alternative subjects 17.2 per cent.

In the second year English (3), plane geometry (4), the continuation of the same foreign language elected in the first year (5), freehand and mechanical drawing (4), woodturning, patternmaking, molding, and sheet metal work (6), music (1), and physical education (2) are prescribed. Chemistry (5) and a second language (5) are offered as alternatives. The prescribed subjects, therefore, constitute 83.33 per cent. of the offering, and alternative subjects 16.77 per cent.

In the third year English (3), a continuation of the same foreign language elected in the first year (5), physics (5), advanced algebra and trigonometry (3), mechanical drawing (2), physical education (2), and forging (6) are prescribed. The second language (5) (if such has been

¹These regulations are copied verbatim from the printed course of study.

elected in the second year) may be continued, and chemistry (4) or an additional language (4) may be taken. German, French, or chemistry must be pursued during this year. The prescribed subjects, therefore, constitute 85.71 per cent. of the offering, and the elective subjects 14.29 per cent.

In the fourth year English (3), a foreign language (4), English and American history and civics (4), mechanical drawing (2), physical education (2), and machine shop practice (6) are prescribed. "With the approval of the principal, a pupil preparing for a technical college course may substitute an academic subject for machine shop practice."¹ Two subjects must be chosen from the following: A second language (4), chemistry (4), physics (4), and spherical trigonometry and solid geometry (4). The prescribed subjects, therefore, make up 72.4 per cent. of the offering, and alternative subjects 27.6 per cent.

(3) Analyzed by Departments

a. *English*.—The course in English consists of fourteen periods of work, and differs neither in scope, intensiveness, nor flexibility from the work prescribed in the general course.

b. *Foreign Languages*.—The offering in foreign languages consists of work in Latin, French, and German, each being accorded a total of nineteen periods. A pupil is required to pursue one of these languages for three years, and after the first year may elect the other two languages. So far as the printed announcements of the work indicate, the character of the offering in this department differs not at all from the foreign language study in the general course. In scope, intensiveness, and flexibility of administration the provisions seem to be identical with the provisions for the general course.

c. *History, Civics, and Economics*.—The only historical work which is available for pupils in the manual training course for boys is United States history and civics. This course is assigned four periods per week and is prescribed for all students in the fourth year. The offering in history, civics, and economics is, therefore, decidedly smaller in amount than the offerings in the general course.

d. *Mathematics*.—Four years' work is provided in mathematics, with a total offering of sixteen periods. Of this offering 75 per cent. is prescribed and 25 per cent. is elective. The scope, intensiveness, and flexibility of the work in the first and second years differ not at all from the work of the same years in the general course. In the third year, in place of advanced algebra and advanced plane geometry, as provided in the general course, the work here consists of advanced algebra and plane trigonometry. In the fourth year, in place of the plane trigonometry and solid geometry, which are offered in the general course, spherical trigonometry and solid geometry are found. So far as the printed announce-

¹ From a note in the announcement of the course.

ments indicate, there is no decided difference in the content of these courses from what is found in the corresponding courses in the general course.

e. *Natural Science*.—Chemistry, elementary and advanced, is offered to the extent of nine periods per week, as an alternative subject. Elementary physics is prescribed for five periods, and an advanced course in physics, with four periods per week, is provided as an alternative subject. The total offering in natural science, therefore, is eighteen periods, of which 27.8 per cent. is prescribed and 72.8 per cent. is alternative.

The provisions for work in natural science in the manual training, industrial, and technical course differ, therefore, from the offering in the general course in these respects, namely: (1) A ten weeks' course in physiology and hygiene takes the place of the year's work in biology in the general course; (2) no courses corresponding to the advanced courses in botany and zoölogy or to the course in physiography are provided; and (3) specialized courses in physics and chemistry are provided.

f. *Industrial and Technical Subjects*.—Twenty-four periods devoted to the various aspects of shop work are offered during the four years, and the total amount is prescribed for all students.¹ The work includes joinery, woodturning, patternmaking, molding, sheet metal work, forging, and machine shop practice. The scope of the offering is, therefore, large, and the intensiveness with which it is pursued is good. There is, however, little flexibility in administration. Boys with special technical interests find little opportunity to specialize in the aspects of technical work which appeal to them most.

g. *Music, Drawing, and Physical Training*.—Vocal music is prescribed one period per week throughout the first two years, the prescription being the same in amount as that in the general course.

Drawing during the first two years includes freehand and mechanical drawing, and is assigned four periods per week during both of these years. In the third and fourth years mechanical drawing only is offered, two periods per week being assigned to the subject. The total offering in drawing, therefore, is twelve periods, all of which are prescribed.

The offering in drawing in the general course and in the manual training, industrial, and technical course differs, therefore, in that (1) mechanical drawing for the equivalent of eight periods is offered in the latter course, but not in the former, and (2) that no freehand drawing is provided in the manual training, industrial, and technical course after the second year.

The prescribed work in physical training is precisely the same as in the general course, namely, two periods per week for the entire four years.

¹ Exceptions may be made by the principal for pupils of the fourth year who are preparing for a technical college course. These pupils may substitute additional academic branches for the shop work.

Summarizing, the work provided in the manual training, industrial, and technical course coincides in many particulars with the work of the general course. The prescriptions, in respect to the total number of periods in English, foreign languages, music, physical education, and elocution, are the same. Neither is there any appreciable difference in the content and in the class procedure in these subjects in the two courses. The elementary work in mathematics and in chemistry and physics does not differ in the two courses, and the single course in United States history and civics is the same in each course. The only significant differences, therefore, between the general course and the manual training, industrial, and technical course consist of the introduction into the latter course of (1) spherical trigonometry, (2) specialized, intensive courses in chemistry and physics, and (3) industrial work. The differences are in the kind and not in the content of subjects, or in the method of treating them.

4. Commercial Courses

(1) In What Schools They are Found

A commercial course of four years is found in the High School of Commerce, Manhattan, and in the Commercial High School of Brooklyn. In the latter school is also a three-year course. A commercial course of three years is also offered in the following high schools: Eastern District, Brooklyn (girls); Bushwick, Brooklyn (girls); Washington Irving, Manhattan (girls); Morris, Bronx (boys and girls); Flushing, Far Rockaway, Jamaica, Newtown, and Richmond Hill, all of Queens (boys and girls); and Curtis, Richmond (boys and girls).¹

V—The Special Courses in New York City Compared with Special Courses in Ten Representative Cities ²

We have treated the published special courses of study in the ten cities in precisely the same manner that we treated the general courses in these cities (see p. 236), and for the same reasons. In consequence we present here only a somewhat detailed summary of the results obtained from those analyses.³

1. In What Cities Special Courses or Schools are Found

The analyses of the special courses of study show that, of the ten cities compared, five (Boston, Cleveland, Detroit, Indianapolis, and Newark) provide differentiated or special high schools devoting their efforts

¹ Commercial education in New York City is made the subject of a special report, and hence is not dealt with here. See Assistant Superintendent Thompson's report.

² See list, p. 236.

³ The working papers of these analyses have been filed with the Committee on School Inquiry.

to intensive training in special or technical lines. These five cities provide such schools for both boys and girls. All ten of the cities, however, save Indianapolis, offer, in addition, special courses in mechanic arts for boys, domestic and applied art for girls, and commercial work for both boys and girls in all of the general high schools. Indianapolis confines all work in mechanic arts for boys and domestic art and science for girls to the one school, the Manual Training High School, but this school is not regarded as a strictly technical school. The restriction to this school of the subjects mentioned is purely a matter of local convenience, the work in every respect being considered academic and cultural in character, not vocational.

Of the five cities having special high schools, three have only one such school (Detroit, Indianapolis, Newark); one city (Cleveland) has two, and one city (Boston) has five. In the other cities all technical and quasi-vocational work is organized within the general high schools. New York City, therefore, in administering the technical instruction through differentiated high schools, finds support in other large cities; but, per contra, the practice elsewhere suggests that a portion of such instruction and training can also advantageously and economically be given in the general schools.

2. The Aim is Quasi-Vocational

The aim in all of the special schools¹ in each of the cities compared is to give a vocational turn to the instruction and training, but not to confine the education to narrow channels. Wherever the instruction is organized as a special course within the general high school, the aim is to furnish specialized or intensified training in some one or more subjects, but to base such training upon a broad foundation of general training. In respect to the aim set up for the special courses or special schools New York City is, therefore, in general harmony with the practice elsewhere.

3. Scope and Intensiveness of Subject Matter

Each of the ten cities compared provides at least a two years' offering in mechanic arts for boys in its general high schools. Most of the cities provide a four-year course. All ten cities (except Milwaukee) provide a similar offering for girls in domestic science and art or in applied art.

¹The special schools are given the following names: In Detroit, "Cass Technical High School" (boys and girls), giving mechanic arts and commercial subjects; in Indianapolis, "Manual Training High School" (boys and girls), giving mechanic and domestic arts and commercial subjects; in Newark, "East Side Commercial and Manual Training High School" (boys and girls), giving a general course, and mechanic, domestic, and industrial arts and commercial subjects; in Cleveland, the "High School of Commerce" (boys and girls), and the "Technical High School" (boys and girls); in Boston, the "Mechanic Arts High School for Boys," the "High School of Practical Arts for Girls," the "High School of Commerce" (boys), the "Boys' Latin School," and the "Girls' Latin School."

In every case, however, the special work is based upon and permeated with much work in the academic branches. English, mathematics, history and civics, and elementary science find place for one year or more in every city.

In most of the cities foreign language study, particularly modern foreign language study, is provided in the special courses or special schools, and in several it is prescribed for all students.

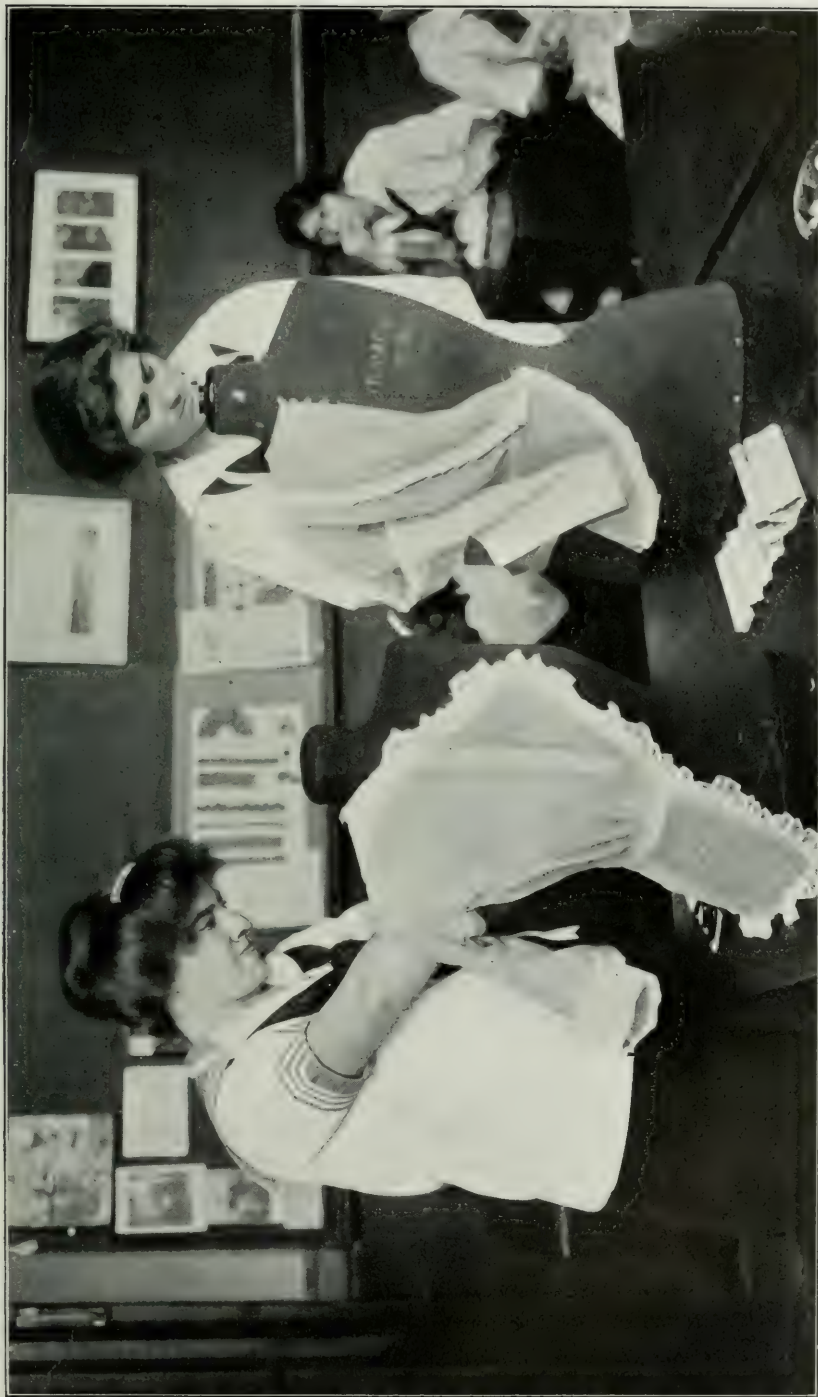
In the manual arts courses for boys the technical work includes industrial and commercial history and geography, economics, drawing, carpentry and wood-carving, wood-turning, pattern-making, forging, machine shop practice, and differentiated courses in natural science and mathematics.

In the practical arts courses for girls are found the technical subjects of sewing, cooking, dressmaking, millinery, household science (home sanitation, furnishing, decoration, and care), household accounts, and home nursing. In a few cities the additional subjects of household management, home architecture, food and nutrition, dietetics, laundering, textile handicraft, metal work, pottery, designing, color and design, charcoal and illustrating, sketching and water color, history of art or history of music are provided.

Commercial work for both boys and girls includes, as the distinctly technical subjects, penmanship, bookkeeping, correspondence, stenography and typewriting, commercial geography, commercial history, commercial English, commercial arithmetic, accounts, and banking.

In addition to the three more common special courses just mentioned (manual arts for boys, practical arts for girls, and commercial courses), a few cities provide intensified or specialized courses in several other departments. Thus, for example, Chicago offers the following special courses: (1) a "builder's course," aiming to prepare students for the building industries and to help to fit young men "after a reasonable apprenticeship" to take positions as foremen, superintendents, or general contractors; (2) an "architectural course," planned to train individuals to become architects and draftsmen, or to give a general course in mechanical drawing; and (3) an "arts course," designed for those interested in drawing, design, arts, and crafts. In addition, Chicago provides eight "two-year vocational courses for boys" and four "two-year vocational courses for girls," all work in any of these courses being credited toward graduation from the four-year course.

Los Angeles provides fifty-three differentiated courses in the six high schools of the city. Of these courses eighteen have a decidedly technical bearing. These are: (1) mechanic arts; (2) domestic arts; (3) fine arts; (4) commercial; (5) electricity; (6) mineralogy; (7) surveying; (8) mechanical drafting; (9) architecture; (10) pattern-making; (11) dressmaking; (12) millinery; (13) forging; (14) foundry; (15) cabinet-making; (16) machine shop; (17) mining and civil engineering; and (18) agriculture.



WASHINGTON IRVING HIGH SCHOOL CLASS IN DRESSMAKING. PRACTICE WORK WITH PAPER.

Cincinnati provides seven technical curricula, among the seven being a course in art and a course in music.

Boston, Cincinnati, and Milwaukee also provide special two-year vocational courses for both boys and girls.

In comparison with the provisions for special or technical courses elsewhere, therefore, New York City is seen to be far from abreast of the times. In the scope and intensiveness of industrial work for boys, industrial work for girls, and commercial work for both boys and girls, it suffers by comparison with several of the other cities. This is strikingly true in respect to the offering in these subjects in the general or "regional" high schools. Moreover, considering the size of the city, the various nationalities represented, and the different intellectual, artistic, and vocational aptitudes among the students, the provisions for special courses or special schools of other types in New York City fall far short of what is being undertaken in several other places. In the few special schools that are operated in New York City the scope and intensiveness compare fairly well—though not fully—with similar schools in other cities.

4. Flexibility

In nearly every one of the ten cities compared the special courses or special schools have been rendered available to a very large percentage of the boys and girls by reason of the flexibility with which the work has been administered. Instead of concentrating most of the special courses in one special school or in a few special schools, the majority of the ten cities have organized those courses in general schools. Even in those cities in which two or more special schools are provided, the rudiments of the special technical branches are usually offered in the general schools. Hence, in nearly all of these cities, there is abundant opportunity for boys and girls to test their interests in special lines of work before definitely electing to pursue any line of work intensively.

In all of the cities the work for the first three years in any special course is pretty definitely outlined and prescribed. In the fourth year, however, the practice is usual to allow individuals to specialize somewhat closely upon that particular aspect of the work which appeals most thoroughly to their interests. In many of these cities, too, the work of the prescribed academic subjects in the special courses is closely correlated with the technical branches. Thus, for example, in the commercial courses the work in English, foreign languages, mathematics, history, and science take on a decided commercial bias. In the manual training and domestic arts courses the same branches emphasize the industrial aspects.

The most striking difference discovered in comparing New York City with the ten other cities under consideration is the paucity with which special courses are organized and the rigidity with which they are administered. That is to say, work in the semi-academic, technical,

or semi-vocational subjects is made difficult of attainment. This is peculiarly true of offerings in manual arts and in domestic arts. Though the former subjects are offered in four high schools, naturally fewer boys will secure the training in them than would be the case if every general high school also provided courses in such subjects. Certainly the administration of mechanic arts courses in other cities is far different from what it is in New York City.

Much the same differences exist respecting the organization and administration of practical work for girls. In nine of the ten school systems considered girls may elect to pursue special courses of this type for at least two years in almost every general high school. In New York City very little work of this kind is easily available, since little is offered in the general schools, and the special schools providing the instruction are few, and, for thousands, are far distant.

The administration of commercial work in New York City and in the other cities is more nearly on a common basis, but even in this department other cities make the instruction much more available for all than does New York City.

Finally, New York City, in comparison with the other cities, provides a very small number of special courses in which the core of the work is academic in character or specialized without being technical. The only special course of this kind authorized by the Board of Superintendents in New York City is the scientific course of four years offered to boys in the Stuyvesant High School. Moreover, within each of the special courses, there is no notable differentiation in the content of the subject matter or in the method of its presentation from what is found in the general course.

In view of the administration of special courses or special schools elsewhere, therefore, it appears (1) that there are fewer such courses or schools than the complex social and business interests of New York City demand, and the physical difficulties of attending widely separated schools make desirable; and (2) that the special courses and special schools at present provided in New York City are not as thoroughly specialized as the organization of similar courses in other cities suggests as wise.

VI—Criticisms and Recommendations Respecting the General Organization and Administration of the High School Programs (Courses) of Study in New York City

Introductory

In the preceding analyses and comparisons it has been shown that, in organizing the high school work in (1) general courses or in general or "regional" high schools, in (2) special or technical courses within the general schools parallel to the general course, and in (3) special differentiated schools, New York City is in harmony with the practice found in many cities. This practice rests on the established American principle that the function of the public schools is to provide equal educational opportunities for every youth in the land, and upon the obvious truth that no two individuals are constituted with precisely the same capacities or interests. "Equal educational opportunities" can never justly be interpreted to mean precisely the *same* opportunities for all; on the contrary, it must be interpreted to mean opportunities as varied as individual and social needs require.

Youths who complete the elementary schools can be classified in two divisions: (1) Those who go to high school, and (2) those who do not.¹ We are here concerned with the first group.

Of the pupils entering the high schools there are again two distinct classes or groups: first, those who have not yet developed any particular aptitudes or interests, or have not decided on any particular life work; and, second, those who have.²

The first main division of the pupils who enter high schools is composed of those individuals who possess no decided bent, who have not yet discovered their permanent interests, who have no definite goal, and who have not much idea of what a high school can give or what they should seek within it. The number of such pupils is large. There is no doubt also that a large percentage of pupils who enter a high school with rather definite aims and ideals change their aims and ideals very materially if their stay in school is sufficiently prolonged. This is inevitable. Ideals are constantly shifting and changing for most adults; in adolescence instability is a common characteristic. In a very real sense, the boys and girls at this stage begin life anew. In some respects they are more helpless and dependent at this time than in the days of their childhood. They cannot make adjustments readily, and they ought not to be urged to do so over-rapidly. Hence, for these large numbers,

¹ In 1909-1910, 31,341 students were graduated from the public elementary schools in New York City, and, of this number, 19,612 entered high schools, i. e., 63 per cent. of the graduates entered high school and 37 per cent. did not. (From Table LXVIII of the Twelfth Annual Report of the City Superintendent of Schools, July 31, 1910, p. 138.)

² There are no available statistics respecting the proportion of pupils in the two divisions mentioned here. It is a well-recognized fact to all high-school administrators, however, that such classes of pupils exist.

the period should be one of self-discovery, testing, and *general* development. For them, therefore, the general high school or the general course in the high school seems the wisest—at least during the first and second years. Before the age of sixteen, high school boys and girls are generally too young and have had too little experience to decide permanently and positively upon a vocation for life and a curriculum that will lead to it.

The ambitions, aptitudes, and resources of the second main division of pupils have enabled or forced them early to select a goal in life, and prompted them to shape their education in the best ways to realize their purposes. All that they require is the opportunity to secure the instruction that will be conducive to this end. Of course, no fixed classification of the pupils in this group has ever been made or can be made. We may, however, for our present purpose, subdivide them into six groups: *first*, those who plan definitely to complete the high school course and later to enter various colleges of liberal arts and sciences. The high school for them is a preparatory school; and, if it fulfills its function in this respect, it must provide such training as the colleges demand for admission. *Second*, there is a class who plan definitely to complete the high school and to enter higher technical schools, engineering schools, offices, or other positions connected with industry. The demand made by this class is, like those of group one, for instruction that will fit them to enter advantageously upon their chosen career. For the members of this group manual training, drawing, applied mathematics, and specialized courses in science are preferable, if not essential. *Third*, there is a group composed of those whose talents, environment, and tastes lead them to seek instruction which will enable them, on the completion of a four or five-year course in the high school, to enter the various paths of directive business. They do not expect to engage in routine office duties or clerkships, or to enter other subordinate business positions; but they aspire to positions of leadership in trade, transportation, finance, industry, and other business callings. For this group a thorough business course in a high school of commerce or in a general school, preferably the former, is desirable. *Fourth*, there is a group whose ability, ambitions, and resources lead them to seek to fit themselves to occupy subordinate positions in professional, business, and commercial offices, and who, therefore, look to the high schools to equip them as fully as possible for such positions. The general commercial or business course in the schools, largely clerical in character, seeks to serve the interests of this class of pupils. *Fifth*, there is a group, mostly girls, who enter the high schools with the definite purpose of preparing to become teachers in the elementary schools of the city. A course of study embodying the prescriptions of the city training schools and other subjects fitting generally for this kind of work must, therefore, be provided. *Sixth*, there is a very large group of both boys and girls entering the high school each year, knowing definitely that they will be unable to complete the entire four-year course,

but anxious to secure as much training as possible in the brief time at their disposal. For the most part, these pupils expect to enter upon one of two or three definite lines of activity. These activities are: (1) office duties in very subordinate places; (2) clerkships, and (3) industrial work. The expectation and hope of these pupils is that they will receive as much training in efficiency as their stay in the school makes possible. Moreover, the ideal of equal educational opportunities entitles them to such training.

These then are the six types of pupils who ordinarily enter the New York City high schools with definite aims and purposes. If our democratic ideals are to be approximately realized, definite provision for all these classes is both just and imperative. The aims of a school system must always determine the subject matter to be taught and the methods of instruction. Whether provision for these six divisions of pupils is made in separate schools, or in separate curricula¹ within particular schools, is not fundamental; the essential fact is that such distinct classes of pupils do exist in numbers sufficiently large to make the consideration of their particular needs imperative in New York City, as elsewhere, and that training essential to the real welfare of the individuals themselves, and the City, the State, and the nation at large must be provided.

Hence educational theory and common practice throughout the country support the principle of organizing high school education into (1) general curricula to serve that large body of pupils who, at the outset of their high school work, do not know their own points of strength and weakness; who are not forced by necessity to select at once a calling in life; and who have no well-defined educational ambitions; and into (2) special curricula to serve those pupils who have more or less fixed or predetermined plans, based upon individual capacities or ambitions, or determined by social conditions outside of the individual himself. We, therefore, commend the general plan of organization of the high-school system of New York City.

Commending the general plan of organization, however, is entirely different from approving the actual administration of that plan. In considering the completeness and efficiency of the system, two questions force themselves to the front for answer. The first is: Is the general course or the general high school as broad in the scope of the subject matter offered, as continuous and intensive in the instruction provided, as flexible in the administration of the work, and as readily available as it should be to meet the complex needs of a city of nearly five million people,² divided into fifty-four different nationalities,³ representing all degrees of wealth and poverty, and exhibiting all variations in interest.

¹ The nomenclature herein adopted is that recommended by the Committee on College Entrance Requirements of the National Educational Association. See p. 225 of this report.

² The federal census of 1910 gives New York City a population of 4,766,883.

³ See special bulletin of the United States Immigration Commission for December 31st, 1909. The figures are based on statistics secured in December, 1908.

temperaments, aptitudes, ambitions, and resources? The second question is: Are the special courses or special schools as numerous, as differentiated in kind, as broad in scope, as intensive in training, as available to those who need them, and as adapted to the requirements of those seeking to enter them as the city ought to be providing? The answer in both instances must be "No." A consideration in detail of the two types of schools is necessary. The discussion will treat first the general course and the general school, and then the special courses and the special schools.

1. The "General Course" and General School Considered

(1) As to Availability

The question of the availability of the general course for all who could or would profit by it involves the whole question of the adequacy of high school facilities in New York City. Since, however, seventeen of the twenty high schools provide a general course, discussion of the availability of this type of instruction must deal with the distribution of these schools over the city, and the actual provision within them of opportunities for appropriate general election of studies.

The enormous size of most of the high schools in New York City and the resulting fact that there are comparatively few high schools for a city the size of New York,¹ keep the schools long distances from a large part of the high school population. Long distances, necessitating the employment of mechanical means of travel, impose considerable expenditures of time and money upon young people seeking a high school education. For many pupils these incidental expenses are prohibitive of a high school education. For many others, it is fair to assume, they are the determining factor in the selection of a school to be attended and in the length of time devoted to such schooling.²

When, moreover, we note that nearly every high school in Manhattan and Brooklyn is a differentiated school in one or more respects, appealing even through its general course to particular types and classes of students, and not providing primarily for those who seek to discover their own true aptitudes, the availability of the general course and the possibility of its accomplishing its real function, is very radically diminished.

Three ways suggest themselves of overcoming the difficulties incident to making the general course available to all pupils of the city (or at least of reducing the difficulties to a minimum), and of making such a course (and also the special course) serve better the purpose for which

¹"To provide for its children the same high school accommodations as are given by Minneapolis, Denver, and Kansas City, New York would need seventy-eight high schools instead of twenty." *School Review*, Volume XIX, page 685. An article on the report of the Committee of the High School Teachers' Association of New York City, Benjamin C. Gruenberg, Chairman.

²These assertions are based on the expressed views of high school principals.

it is designed. First, several additional high schools might be provided for various parts of the city. It is indeed doubtful if it is economically necessary, or educationally or socially desirable, to provide buildings for pupils in excess of 1,500.¹ Second, the chief aim or purpose of each school might be more clearly and definitely defined, in which case the high school with a general course would be better able to serve its purpose. Undoubtedly one of the reasons why the general course does not at present make a stronger appeal to its students is that it attempts to serve too many classes of pupils, and its efforts are too scattered. Its efficiency would be increased if its function were more clearly defined as serving the needs of that group of pupils who have not fully decided on a definite educational career.² Third, the daily transportation expenses for all who must of necessity travel a distance greater than a stated minimum might be borne by the city at large. This may not at present be feasible. But the first and the second plans are possible and feasible. We, therefore, concur in the recommendations made in another part of this report on high schools³ that plans be adopted (a) to provide the different types of high schools essential to meet the needs of the various groups of pupils, and (b) to locate these schools where they will best serve the pupils for whom they are intended. We recommend also that serious consideration be given to the plan of defraying the expenses of transportation of those pupils who reside beyond walking distance, and for whom the cost of transportation is a barrier to obtaining a high school education.

(2) As to Adaptability

It is certainly incongruous to provide a single uniform course for all pupils in the general high schools in a city with the diversified business interests, the complex social relations, and the individual differences in intellectual, physical, and moral powers found in New York City. Uniformity can operate advantageously only over a homogeneous body dominated by singleness of aim; not over a heterogeneous community with diversified aims and interests. The general course in New York City is not adjusted to the varied needs of all the pupils who pursue it. It rests altogether too much on the theory that whatever is useful in developing and training one class of individuals is equally serviceable for all. It is, moreover, noticeable that the subjects that hold the dominant place in the course are the ones tradition has handed down. The older college prescriptions set the ideal for all—that is, Latin, mathematics, and (with somewhat better reason) modern foreign languages. These subjects do, of course, possess important and indispensable values for pupils of certain types of minds, and for those preparing for certain definite lines of work; but our adverse criticism is directed against setting the same prescrip-

¹ See Professor Ballou's report.

² As analyzed on p. 265 of this report.

³ See Professor Ballou's report, for discussion.

tions for all classes of high school pupils. The controlling ideal is too much that of the scholar, the exceptional individual, or the class of the privileged few.

If, however, the democratic principle is to hold that each pupil, whatever his native endowment or his life aims, shall be given an opportunity to develop himself to the fullest degree possible, shall be encouraged to derive from the course of study what he is capable of assimilating and of transmuting into personal efficiency and happiness, and into social service and welfare—then a uniform course of study, or a course that approximates close uniformity, is decidedly unwise. A system of schools supported and administered by the people of a democratic community ought to be established on democratic principles.

To this end, the high schools of New York City must be better adjusted to social conditions. In particular, the curricula require modification to make them conform more closely to the interests and needs of pupils who pursue them or who should be encouraged to pursue them.

Courses of study and curricula are but means to given ends; never ends in themselves. They are administrative devices for guiding and ordering the work of the school. They rise out of social conditions and must find justification by ministering to social needs. They consequently reflect the aim of the school, and as the aim of the school in a complex progressive society is constantly undergoing modification, courses of study must gradually change in content and in the distribution of emphasis. Tradition should have no greater hold on them than it has on the real life of the people using them. When old views have been discarded and new ones have been accepted, when old interests have been superseded by new interests, the instrument for adjusting the members of society to the changed environment—the school—must in turn undergo modification.

To secure this vital adjustment, the principals of the various high schools should be encouraged, in conjunction and coöperation with their respective corps of teachers, to make thorough analyses of the needs and desires of the communities in which their schools are located, and of the dominant interests and real needs of the pupils that enter their schools. They should formulate courses of study for their several schools in the light of their findings and the best educational insight they can command. Such courses of study, unless disapproved by their official superiors, should then be put into actual operation in the schools for which they were designed, and the results carefully watched by the Bureau of Investigation and Appraisal. (For information concerning this Bureau, see Professor Elliott's report.) Every five years it should be incumbent on each principal and his corps of teachers to reanalyze the entire local situation, and, so far as found advisable, to recast the course of study anew. Only by adopting some such procedure can a course of study be kept in touch with the real needs of the community it is designed to serve and in harmony with contemporary educational principles.

We, therefore, urgently recommend that the general course be made more easily available to such as wish to pursue it, and better adapted to local needs. More specific and detailed suggestions and recommendations are embodied in the discussions that follow.

(3) **As to Scope**

The analyses which constitute the first portion of this report have revealed clearly that, in respect to the scope or range of subject matter found in the general course, New York City is in certain particulars behind every one of the ten cities with which it was compared, and no more than abreast of the aggregate offerings in any of them. It has been shown, too, that to a very large degree the nominal offering in New York City does not coincide with the actual offering; that many subjects which appear in the official course of study for all schools are being taught only in a few schools or in none at all. It should be noted also that no principal possesses any authority whatever to supplement the offering of the uniformly prescribed course or to modify the character of the offering to meet the special needs of pupils in his school.

A striking omission from the general course in New York City is manual training for boys. As has been shown elsewhere, of the ten cities with which comparison has been made nine provide at least a two years' offering in manual training in their general high schools, and the one other city provides the subject in a general academic high school open to such as choose to select that school. The practices in these ten cities may be regarded as representative of what is being undertaken in the more complete school systems throughout the United States. Certainly manual training of the right sort, as a means of education, has established its claims. If the general curriculum is primarily designed to give a large variety of experiences which interpret the life of to-day, then general introductory courses in manual arts cannot be omitted. Manual training, when properly carried on, provides the laboratory experience whereby the pupil comes to appreciate the significance of productive and constructive activities in modern life. We, therefore, recommend that as rapidly as accommodations can be provided manual training be introduced into the first and second years of the general curriculum of every school, one year of which should be prescribed for graduation for every boy.

A second noticeable omission from the general course as it is actually administered is the inadequate provision of general elementary work in domestic science and art and applied art for girls. Nine schools, it has been shown, provide a single year's offering in cooking, and five of these nine also give opportunity to obtain instruction in sewing. There is, however, in the general course, no applied art, or home management, or home architecture and decoration, or home nursing, or home sanitation, or domestic laundering, or chemistry of foods, or household econ-

omy. Since the aim of the general curriculum for the girls is to help them to find themselves, and to assist them to a more ready adjustment to the social conditions and the home duties which fall to the lot of most, if not all, of them, courses in the subjects enumerated (and similar courses) are imperative. Hence, courses of the kinds indicated should be much more generously provided than at present in every school having a general curriculum open to girls. At least a two years' offering should be made available for every girl who desires the work, and one year's work should be required for graduation for every girl in the general curriculum.

In commercial offerings in the general course, the scope, as it appears on paper, is fairly extended; as it is actually found in the schools, there is much to be desired. It is as important that every pupil taking the general curriculum should have opportunity to secure an introductory acquaintance with subjects in this department as in any other. Hence, in the general curriculum, a year's offering in each of the following subjects is recommended: (1) Bookkeeping; (2) Stenography and Typewriting; (3) Economics; (4) Commercial and Industrial History and Geography. All of these branches, except Commercial and Industrial History, are nominally provided at present, but bookkeeping is actually taught in but five schools; stenography and typewriting in six; and economics in two. Moreover, commercial law and commercial geography are at present found in but four schools. It is said by many principals and teachers that pupils do not elect these courses when opportunity is given them. It appears to us, however, that the reason lies not chiefly in the nature of the subjects themselves, but in the limitations of time due to the excessive amount of prescribed work. Commercial subjects should not be unduly encouraged. On the other hand, a mode of administration which makes their election prohibitive to the general student is to be condemned. The subjects enumerated above are worthy of a co-ordinate place with other branches in the general curriculum.

A new course greatly to be desired as an offering in every school for the general student is a course in civic and vocational guidance (introductory social science). Such a course should not be solely commercial and industrial in character, but should seek to give every pupil a keen appreciation of the activities of New York City and his personal relations to them. It should aim more fully to adjust an individual to his times and his environment. Such a course may properly be styled "Introductory Social Science—New York City, civic, commercial, and industrial." It should emphasize the study of the government agencies by which New York City is regulated, and the various professional, philanthropic, social, commercial, financial, and industrial activities through which the life of the city is kept going. It might well include a survey of the history of the world during the past twenty years and the relation of New York City to the world movements. It should include a consideration of the civic, commercial, and industrial needs of the

city; a study of the types of vocations found in it; an analysis of the personal characteristics and native aptitudes which are essential for entering advantageously on the various great types of vocations; an outline of the technical preparation that must be undergone to fit for these vocations; and, finally, the probable rewards that will accrue to those who engage in them.

If by the expression "general culture" are meant the extension of one's horizon, the sharpening of one's insight, the breaking down of prejudices, and the intensifying of one's sympathies for others, a course of the kind just outlined should prove of highest cultural value. Indeed, it seems to have such value in other cities in which it is provided, notably Chicago. Moreover, if properly conducted, it ought to deter many a student at the outset of his career as a high school student from choosing his course unwisely, and, in consequence, by minimizing discouragements and dissatisfactions, to retain in the schools a much higher percentage of pupils than at present. On the other hand, it ought to reveal to some students their unfitness to pursue the general course in the high school and to assist them to readjust their plans without undue waste of time and energy. In order to serve these ends, the course suggested should find its place in the first or second year, and we urgently recommend the incorporation of such a course into the curriculum as soon as materials and teachers are available, and suggest that the course be required of all students in the first year.

In the older academic branches, the scope of the work offered in New York City is more nearly in keeping with the liberal spirit of the age, and yet here, too, certain changes are desirable. Fourteen periods as the total aggregate offering in English, in a city in which fifty-four races are found in the high schools, certainly do not seem adequate. The subject is given less attention than Latin, French, or German. Surely if the high school is to fulfill its mission and adjust children of our immigrants to the life of America (in 1908, of the 25,452 pupils in attendance in the high schools of New York City, 13,255 were children whose fathers were of non-American races¹), appreciative familiarity with the English language and literature is necessary. Two types of courses in English are lacking in the New York City general course. First, there is need of "appreciation courses" in English, the aim of which should be to give a real love for good English literature and a real appreciation of it. Such a course should not consist primarily of English classics but of literature that has grown out of modern life and that is a true interpretation of the best life of to-day. This course should be intensely *real* in character, and should include, as part of its content, current fiction, poetry, essays, historical and political writings, and treatises on art, science, and ethics of a kind that can be comprehended and assimilated

¹Special report of United States Immigration Commission for December, 1909. In June, 1910, the total enrollment of pupils in New York City for the school year was 50,902 (Superintendent Maxwell's Twelfth Annual Report, page 147), but no statistics respecting their nationalities are available for that year.

by boys and girls without special linguistic and literary tastes. Second, there is need of intensified courses in English in the third and fourth years of the general course. Fourteen periods, the total offering at present in English in New York City (except that in two high schools an additional and supplementary course of three periods is given), are not quite equivalent to three years of five periods per week. A survey of the comparative tables referred to elsewhere in this report (see page 242) shows that only four cities provide fewer than twenty periods of work in English and that several cities offer considerably more than this. With many of these cities, fifteen periods in English are prescribed for all, and, in addition, several intensified courses in the subject are open for election. We suggest that New York City make similar courses available.

In science elementary courses in astronomy and geology might well find a place. So also should advanced courses in physics and chemistry be provided for such as desire to specialize in these subjects.

In mathematics and foreign languages the scope is ample and calls for no expansion. Principals, however, should be given freedom to organize "Mathematics V, Advanced Mathematics," as classes in higher algebra, solid geometry, or trigonometry as the real needs of their students may require.

In history, civics, and economics the offerings are as complete as the demands of a general course require. The organization of the offering could, however, be greatly improved, and the adoption of the recent syllabus in history will facilitate this improvement. We recommend, therefore, that as rapidly as possible the work in this department be reorganized in conformity with the new syllabus.

It is strange that in New York City, one of the most famous musical and art centers in the world, and inhabited to so large an extent by peoples and races noted the world over for their musical and artistic temperaments—it is strange that in New York City fine art and music receive so little recognition in the high schools. Courses in water color, oil painting, illustrating, carving, pottery-making, metal-working, the history of music, musical composition, and musical harmony should be available for those pupils who seek them.

Respecting the scope of the general course of study in New York City we, therefore, recommend that introductory or elementary courses in manual training for boys, domestic science and art and applied art for girls, introductory social science (municipal activities and civic and vocational guidance), and fine arts be added to the present outlined course; that additional courses in commercial work, English, science, and music be provided; and that specialized courses and also general "appreciation courses" in science, mathematics, history, and English be authorized and offered wherever the peculiar interests and needs of pupils make their presentation desirable.

(4) **As to Intensiveness**

The comparative analyses made at the outset of this report show that New York City is far out of harmony with the practice of several other cities. The following criticisms and suggestions grow out of those analyses.

The practice in most high schools throughout the country is to assign four or five recreation periods per week to a large majority of the subjects in the high school. In order to introduce a larger number of subjects into a curriculum, however, there is always a tendency to reduce the number of periods assigned to the various subjects. It is our opinion that if the time allotment is diminished below four periods for studies requiring preparation, the danger of superficial results in the instruction is imminent. Therefore, we recommend that this matter be a subject of special investigation (experiments) by the teachers, high school principals, and the Board of Superintendents. Until the number of periods per week for the various subjects has been determined by carefully appraised experiments, comments on the intensiveness of instruction in New York City must be based on the obvious local needs of pupils and the general practice elsewhere throughout the country.

By assigning to English but three periods per week subsequent to the first year, New York City has reduced the intensiveness to a questionable minimum. As has already been stated, in a city seeking to adjust fifty-four different races to our society and actually enumerating in her high schools children of alien races in excess of 52 per cent. of the total enrollment, the study of the English language and literature demands a very prominent place. It is doubtful if four years' work should be prescribed for all students; but better results would be secured if all sections (classes) in English (including elocution) in the first three years were to meet five periods per week, and if three years of English were to be prescribed for all. In the fourth year the subject might be offered four or five periods as the situation required.

In the light of practices elsewhere and of contemporary educational theory the intensiveness of the foreign language offerings requires no notable modifications.

So long as the city accepts the prescriptions of the state respecting the quantity and standards of work required for graduation, it would seem wise also to accept the time allotment made by the state for various subjects. A marked weakness is to be noted in this respect concerning the organization of the courses in mathematics. The state prescribes a year's work carried through the equivalent of five periods per week in plane geometry. The city offers plane geometry in the second year four periods per week and supplements this with a two-period course in the third year. Economy of time and better educational results would be secured if plane geometry were given five times per week at the outset and thus completed at the end of the second year. Nor can educational

theory and common practice justify the two-period course in "Mathematics III. Algebra. Review and Advance," which extends throughout the entire year. Better results, we believe, will accrue if the course (if continued as a separate course in mathematics) be condensed into a four-period course extending through one term only. If the advanced course in plane geometry, "Mathematics IV," is to be retained in its present place it, too, we believe, will gain in value if condensed into a four-period course extending through one term only.

The newly issued syllabi on the courses in history in New York City are planned to correct several defects found in the old syllabi. It is to be hoped that principals and teachers of history will speedily adopt the essential features of the revised plans. It certainly is incongruous to prescribe ancient history for all pupils of the second year—a large per cent. of whom (according to probable withdrawals based on actual statistics) are destined to leave school at the end of the year—and to defer the study of our modern peoples, civilizations, and institutions to the fourth year. Nor is "History II (English)," which is offered for two periods in the third year, satisfactory. It is not intensive enough to yield valuable results to the individual, nor does it satisfy the state requirements. An additional period at least should be added to this course. United States history, including civics, is too large a subject to yield its full value if pursued through a single year, four periods per week. The work should either be assigned five periods per week, or else be differentiated into two courses—one of three periods per week for a year, devoted primarily to political, constitutional, industrial, and economic history of the United States, and the other of three periods per week for one term in civics.

The administration of the work in science deserves adverse criticism. All classes in this department in the third and fourth years, except those in physics and chemistry, are assigned four periods per week. This assignment of time is inadequate if the work is to be commensurate with the real value of the subject matter. All laboratory sciences should be pursued not fewer than five periods per week. If physiography of the fourth year is to be made merely an informational course without any considerable laboratory work on the part of the pupils, four periods per week devoted to the subject will suffice.

The courses in music and drawing, though as intensive as the work offered in the other cities compared, appear decidedly inadequate for New York City. Comment has already been made respecting the city as a musical and art center, and with those considerations in mind, a single course in music, meeting once a week for four years, and an aggregate offering in drawing of six periods per week for one year appear to discriminate unfairly against the boys and girls whose talents lie in these fields.

A three-period or four-period course in both music and drawing, extending over the entire four years, should be made available as elec-

tives for those who might profit by their study. Such a course in music should include the History of Music, Musical Composition, Musical Harmony, and Voice Culture. The correspondingly intensified course in drawing might well include tracing, modeling, still life, designing, and water colors.

Elocution, required for one period during the first year and offered as an elective for one period during the three following years, is not given the attention its value merits. It is acknowledged by all that the greatest medium of human expression is oral language; yet altogether too little place is given to developing in high school pupils the power of clear, distinct enunciation, proper pronunciation, and grace, vigor, and elegance in oral speech. Oral expression (which we believe is a much better phrase than "elocution" to denote the content and aim of this course) demands a prominent place in every class exercise in English, and should be given this attention. In the senior year a course of three periods per week in elocution, as a separate subject, is strongly recommended.

Finally, physical training, assigned two periods per week throughout the four years, is given the intensiveness that the subject demands. We recommend, however, that the work of the first two years consist of a maximum amount of actual physical exercise in the form of games, dances, gymnastic drills and contests, and a minimum amount of theory.

Summarizing, we recommend:

That the question of the number of periods per week and which subjects should be taught be investigated by the Bureau of Investigation and Appraisal. (See Professor Elliott's Report.) Pending such investigation we make the following recommendations:

1. That the work in English be assigned five periods throughout the first three years, and four or five periods the fourth year.
2. That plane geometry be assigned five periods in the second year to conform to the standard set by the state (as long as the city prescribes state examinations).
3. That algebra and geometry of the third year be organized into two half courses of four periods each for one term.
4. That as speedily as possible the new syllabi in history be adopted by all schools.
5. That all science courses after the first year be accompanied by individual laboratory work on the part of the pupils, and that to facilitate this work all science courses (after the first year) be assigned not fewer than five periods per week.
6. That more courses in music, drawing, and art be offered as electives and be assigned three or four periods per week.
7. That oral expression be given much attention in every class exercise in English, and that a three-period course in elocution be made available in the third or fourth year.
8. That physical education provide a minimum of theory and a maximum of practice, especially in the first two years.

(5) As to Flexibility

It is clear that a program of study considerably more extensive in scope and more intensive in attack than the existing general course in New York City will be impossible of administration unless corresponding changes are made in the uniform prescriptions for all students. To us the rigidity of administration in New York City seems to be the crux of the entire high school problem respecting the course of study. In comparison with the practice found elsewhere, and in the light of current educational theory, we are convinced that the excessive uniformity in this respect constitutes the most serious defect and the gravest weakness of the administration of the program of studies. Not only are the specific subjects and "points" which are required for graduation more numerous than the requirements in most other cities, and, we believe, unwisely specified, but to such as hold that the aim of the schools is not to repress or destroy individuality, but to develop it, the administration of the work of each year takes on a rigidity that is distressing. We hold to the principle that a progressive democracy requires leaders as well as coöperators—men and women with trained initiative—and not merely a body of citizens with conventionalized ideas, habits, and attitudes. It follows, therefore, that if the schools are to serve well our democratic interests, they must encourage to the utmost individual talents, individual judgments, and individual responsibilities. Trained judgment, self-reliance, and self-control come, however, from the repeated exercise of choices and personal responsibilities, not from unquestioned obedience to external direction. Any curriculum, therefore, that is rigidly prescribed by external authority deprives the pupil, on whom it is imposed, of the opportunity to develop power of judgment, and it may also prevent attaining the training best suited to individual needs.

The general course in New York City is unwisely and unjustly inflexible. There is need for much decentralized authority in its administration and the delegation of greater powers to those who are finally to interpret and apply the curriculum. No two sections of the city have constituencies with precisely the same interests. No two schools have pupils with uniformity of tastes and aptitudes. These facts should be taken into account to a greater degree than at present. The principals and heads of departments of the high schools in New York City have learned by experience and reflection what constitute desirable modes of administration; and it is safe to trust largely to their judgment. Above all, they deal with the *real* problems, are in contact with the *real* situation, and consequently can know better than any other class of officials the particular modes of administering a curriculum which will give the best results and the greatest satisfaction to their pupils and districts. Hence, they are worthy of large confidence, and of the bestowal on them of ample freedom and power to administer the general curriculum as contingencies make desirable. Moreover, much greater opportunity than

at present should be given students to select under guidance the major portion of their work for themselves.

By referring to the comparative tables (pages 242-47) it will be seen that New York City prescribes for graduation 70.1 per cent. of the total number of "points"; that the prescription by years (exclusive of subjects requiring no preparation outside the class exercise) is 100 per cent. for the first year, 75 per cent. for the second, 50 per cent. for the third, and 35 per cent. for the fourth; and that the total prescription of 70.1 per cent. is distributed over the various departments as follows: English, 17.2 per cent.; foreign language, 18.44 per cent.; history, civics, and economics, 11.07 per cent.; mathematics, 11.07 per cent.; and natural science, 12.3 per cent. Furthermore, it has been shown that owing to the requirements of the state authorities the nominal prescriptions are considerably smaller in the aggregate than the actual prescriptions, and that the nominal range of choice of subject matter is still further diminished by reason of the moral pressure brought to bear upon students in certain schools and by traditions that have, in consequence, grown up in those schools.

Reference to the general course (see table, page 226) will also reveal the fact that students of the first year particularly are very much restricted in their opportunities to pursue work in accordance with their special needs. During this year the same twenty-six periods per week are, except in rare instances, required of all pupils, whatever be their aims, abilities, or tastes. Nor is there any differentiation in the content of the subject matter provided, or in the methods employed in presenting it. Straight ahead all must go, if they go at all, in lock-step with each other. The effect is to discourage all but the apt. The principle that actually, if not intentionally, dominates the practice of the schools is that they are for the few that are already fit to walk alone; not for the mentally, socially, and physically undeveloped. With any such principle we take decided issue. To the shirk or the hopelessly incompetent the door of the high school should be closed as soon as his identity is recognized; but to the boy or girl with ambitions, energy, and grit, every possible aid and encouragement should be extended, to the end that earlier deficiencies in training (if they exist) may be covered; that new sources of strength may be discovered and developed; and that earlier acquirements may be enlarged. The true function of the high school is to minister to all individuals who seriously and sincerely seek its aid—not to select only the fortunate few with exceptional abilities or abundant economic resources, and to allow them to set the standards and the course of study for all.

The general course in New York City is doubtless not intended to produce any such results; but in its actual administration such results do issue, as the statistics of the numbers of withdrawals from the schools bear indisputable witness. It cannot be justly asserted, of course, that the course of study is entirely responsible for the large number of "discharges." The extent to which it is responsible, because of its content

and administration, should be made the subject of careful study by principals and teachers. Meanwhile, in view of what has been said, it is impossible not to charge the course of study and its administration with a large share of responsibility for the very great loss of pupils, at least during the first year.

The following more detailed discussion considers the general course under the three headings of: (a) Total prescriptions for graduation; (b) prescriptions for graduation by subjects, and (c) prescriptions by years.

(a) Total prescriptions for graduation.

Seventy and one-tenth per cent. (70.1 per cent.) of all prepared work which is acceptable for graduation from New York City high schools, it has been shown, is absolutely prescribed for all pupils. If work in studies requiring no preparation be included, New York City permits, in 79.33 per cent. of the "points" required for graduation, no individual choice whatever, except in one respect, namely, which one of three foreign languages will be elected. That is to say, virtually four-fifths (79.33 per cent.) of the entire four years' course is identically the same for all students, whether they are boys or girls; children of cultured homes and surrounded by helpful influences, or children of ignorant, impoverished parents and deprived of nearly all wholesome, indirect, educative agencies; youths of brilliant native endowments, or youths of mediocre or little ability; pupils of artistic temperaments, or pupils of decided intellectual interests; or, finally, individuals who are timid, docile, and fitted for the directed activities in life, or individuals who are born leaders, possessing powers of initiative, generalship, and control.

We view this uniformity of prescription as vicious in principle and injurious in practice. It is undemocratic, unsocial, unpedagogical. Whatever may be the intrinsic values of certain prescribed subjects, those values are not realizable to any satisfactory degree unless the subjects can be made to relate themselves to the past, the present, or the prospective future experiences of the individual pupils pursuing them. Moreover, while forcing pupils into channels for which they possess no appreciable aptitudes, the uniform prescriptions deprive many pupils of the instruction and training which are really suitable for them, and to which they are entitled. We, therefore, recommend that the uniform prescriptions for graduation in New York City be reduced fully fifty per cent. from the present requirements. That is, we recommend that not more than 55 per cent. of the units or "periods" required for graduation be specifically prescribed for all students, but that individual elections of studies be allowed and encouraged to the minimum amount of 45 per cent. of the required work.

(b) Prescriptions for graduation by subjects.

Respecting the prescriptions in the various departments of study, we hold to the following principles, namely: In a system of high schools, supported at public expense and administered primarily in the interest of the state, the social sciences and the vernacular language and literature should hold preëminent places. Intelligent and loyal citizenship can be approximated only through such instruction and training. Also, the dependence of the civilization of to-day upon the facts, principles, and applications of natural science renders training in this field essential to personal efficiency and welfare, and to the economic, industrial, and commercial prosperity of society at large. Moreover, in an industrial country such as ours, and particularly in a political unit such as New York City, in which economic struggles are so keen and social distinctions are so marked, there is urgent need of instruction in the public schools that will give a real appreciation of industry, an insight into the general processes by which a large proportion of the inhabitants maintain themselves, a respect for the dignity of manual labor, and a sympathetic understanding of industrial questions. To these ends, and because no other subjects can give similar laboratory experiences, manual training for boys and domestic science and art for girls should be included in the list of prescribed subjects in every general high school course. Only in rare instances can substitutions for this work be approved.

The further social demand that the body of citizens be of sound physical health gives justification for insisting that all shall be instructed in the laws of health and the ways and means of preserving and developing health. Such a course should comprise instruction in general biology, the larger facts of bacteriology, and the practical aspects of human physiology and hygiene. Supplementing the theoretical instruction, a course in physical training is essential, to the end that corrective exercises may be prescribed and desirable habits of bodily activity may be established. These considerations, therefore, give warrant for prescribing for all pupils an elementary course in bacteriology, physiology and hygiene, and systematic physical training. If a course in "Elementary Science" is made sufficiently general as to include instruction in these three aspects, such a course, supplemented by supervised physical training, satisfies the requirement.

The state also possesses direct interest in the moral equipment of its citizens. The inculcation, therefore, of moral ideals and the training in moral conduct become functions of the school which ought to operate upon all its members. Just how instruction and training in morality may best be given in the public schools, experimentation has not as yet sufficiently indicated. The most fruitful undertakings in this field thus far are those which produce indirect moral results. The general spirit and discipline of the school, the classroom procedure, and the influences and experiences connected with the administration of the quasi-academic stu-

dent organizations are full of opportunities for moral instruction and training. Nevertheless, specific formal agencies may not be neglected entirely. The practical presentation of ethical problems by means of familiar talks, vigorous pointed addresses, and appropriate readings in "Assembly" possess large and permanent values, and should be employed in every school. It follows, therefore, that "Assembly" can justly be proscribed for all. Where the sympathetic interest of principals and teachers can be secured, organized self-government by the students may also be made a valuable means of moral and civic training in high schools.

The concern of the state in the education of its citizens extends only one stage farther. Its stability, prosperity, and growth are conditioned by the contentment, prosperity, and progressiveness of its members. Hence, the state demands that each citizen shall be an efficient workman in some chosen field of beneficial activity. The more varied the types of activity pursued and the more skilled the members of each vocation become, the closer becomes the approximation to the state's ideal. But it is no right or function of the state to prescribe for each member what his work shall be. This is a matter of personal choice.

Considerations of personal culture and pleasure also suggest that an elementary knowledge of music and drawing shall be attainable for all.

It follows from the above that the only absolute prescriptions any public high school can justly lay down for *all* students are courses in English, in the social sciences, in natural science including physiology and hygiene, in physical training, in manual training for boys and in domestic science and art for girls, in ethics, and in music and drawing.

We are, therefore, of the opinion that the three years' prescription of a foreign language and the two years' prescription in mathematics for every pupil seeking to graduate from the general course in New York City are indefensible. The fact is, these subjects seem to have been prescribed (1) because they have been thought to prepare for the study of other subjects much more than because they relate at all to the specific need of the child or to his future problems; and (2) because of their alleged intrinsic superior disciplinary values—an unproved theory for which there is at present at least as much reliable refuting testimony as there are supporting data. We, therefore, recommend that the prescriptions in foreign language study and in mathematics (so far as they are made to apply to *all* students in the general curriculum) be abolished entirely or reduced to a single year.

In place of the present arrangement and in addition to the prescribed subjects which we propose, we recommend that a series of suggestive subcourses¹ be outlined, each centering in some one of the major departments, as English, foreign language, mathematics, history, and science. With these outlined subcourses and with the aid and advice of the

¹ Curricula.

elementary school principals and teachers, parents and pupils should be enabled to select a school or a curriculum that will best serve their needs. Moreover, such subcourses would assist the pupil at the close of his first year to decide what work he ought to pursue the next year. If, after entering upon his high school career, it be discovered that an unwise choice of curriculum has been made by any student, opportunity for revising his choice should not be denied. Moreover, any credit that may have been gained for work satisfactorily completed should be accepted and allowed so far as it is fairly equivalent to the newly selected courses.

In other words, we recommend that the form of the general course of study as it now exists in New York City be continued, but that the prescriptions within it be reduced in number and amount. Supplementing this printed curriculum, however, we recommend that organized subcurricula be printed and circulated among pupils to serve as suggestive guides. The work in each of these suggested subcourses should center in some major subject or department. After the pupil has found some line of work for which he has shown some aptitude, or in which he has shown particular ability, or after he has decided upon his career when he leaves school, the pupil should be allowed to select his school work, with the advice and consent of his principal and teachers, in accordance with his individual aptitudes, or his future purposes.

To the end that he shall not scatter his efforts among too many subjects, and as an incentive to find out, as soon as possible, what subjects he is most capable of profiting by, we recommend that each pupil be required to take at least three years of work in one department of study other than English. This would make it possible for a pupil to postpone deciding in what department he should specialize until he has had at least one year, and possibly two years, of work in school—ample time to elect work in several departments before deciding; and he would thus have had training in choice and would have a proper basis for his choice of a specialty. By this arrangement, every graduate would have had at least three years of study in two different fields of knowledge, and would have had the opportunity to select one of the two fields. Further, the remainder of his work, except as prescribed, could and should be wisely distributed among several departments to prevent overspecialization.

Just how extensive the prescriptions in the fundamental fields shall be has not yet been experimentally determined. In the light of practice elsewhere, and in keeping with current educational opinion, as voiced in associational resolutions,¹ in magazine articles,² and in public discussions, we feel justified in making the following recommendations, namely:

¹ See Report of Secondary Department of National Education Association, 1911; Report of "Committee on the Revision of the High School Course of Study" of New York City (1910-1911); and Report of Consultation Committee of Sixty of the High School Teachers' Association, New York City, March 5th, 1912.

² Numerous articles dealing with this question have appeared recently in *The School Review*, *Educational Review*, *Education*, and other magazines.

(1) In English, including language study, composition, literature, and oral expression, three years of work, with five recitation periods per week; (2) in the social sciences, two years of work, including a year's work in introductory social science (based on municipal activities, civic, industrial, and commercial, and including vocational guidance), and a year's work in American history and civics. The first course may be assigned (three or) four periods per week; the last should be assigned five periods; (3) in natural science, a year of work in introductory natural science, covering four (or five) periods per week, based on biology, and including much instruction in bacteriology, physiology, and hygiene; (4) in manual training for boys and domestic science and art for girls, four double periods per week through one year; (5) in physical training and games, two periods per week throughout four years, the work being conducted so as to give relaxation and pleasure, and to develop useful habits of exercise; and not so much, as is often noticed at present, to secure approximation to theoretical ideals of grace and beauty of form; (6) in "Assembly" talks, readings, and addresses, one period per week during the entire four years, the material presented to call for pupil reactions in some definite form each week; (7) in music, one period per week for two years; and (8) in drawing, one period per week for two years.

To summarize: The total prescription for graduation for all pupils from the general curriculum should not exceed fifty periods or eighty-five "points" out of the total requirement of ninety periods, or 150 "points," and we suggest that these should be distributed over the various departments of study approximately as follows: English, including oral expression, three years (fifteen periods or thirty "points"); introductory social science, one year (four periods or eight "points"); United States history and civics, one year (five periods or ten "points"); introductory natural science, one year (four periods or eight "points"); manual training for boys, or domestic science and art for girls, one year (four periods or eight "points"); physical training, four years (eight periods or eight "points"); Assembly, four years (four periods or four "points"); music, two years (two periods or two "points"); drawing, two years (two periods or two "points"); total, forty-eight periods or eighty "points."

The above arrangement would reduce the amount of prescriptions from 79.33 per cent. (the present percentage of all prescribed work) to 53.33 per cent.

Of course, those preparing to enter the city training schools or other institutions of higher education would be compelled to elect subjects which would satisfy the entrance requirements of those institutions. Moreover, it is recognized that the inauguration of this recommended more flexible curriculum would not in all respects be in harmony with the present state requirements for graduation from a high school. However, it should be pointed out that New York City cannot place the responsibility for the lack of flexibility in the administration of the gen-

eral course of study on the State Department of Education. Indeed, the requirements¹ for an academic diploma from the State Department require two years of mathematics only, in addition to the subjects which we have recommended as prescribed subjects for all students. For a classical diploma from the State Department of Education naturally foreign languages would be required. In the interests of the large number of pupils in New York City who do not graduate from the high schools, or, if graduating, do not go to an institution of higher education, it is desirable for New York City to issue two types of diplomas—the Regents' high school diploma for such as meet the Regents' standards either for the academic diploma or for the classical diploma, and a New York City high school diploma for those who satisfy the requirements for such a diploma fixed by the Department of Education of the City.

(c) Prescription by years.

We agree that at the outset of a student's career in the high school his freedom of choice should be relatively small, but that, progressively, as now, external authority and direction should be diminished. To this end, we recommend, as previously mentioned, the preparation of a series of suggestive subcourses. Within each of these, the work of the first two years in particular should be rather definitely specified. In the last two years—and especially in the fourth year—much freedom of choice should be possible and opportunity for specialization in a relatively narrow field be permitted.

In the first year in each of the parallel courses the following subjects should be prescribed: English, including oral expression, (5); introductory natural science, (4); introductory social science, (4); drawing, (1); music, (1); physical training, (2); Assembly, (1); total, eighteen. In addition to these prescribed subjects most of the subcourses should provide an alternative choice of Latin, or German, or French, or algebra, (5). Each pupil whose physical and mental strength will warrant the effort should be permitted to elect a second alternative in the group of foreign language and algebra, or one subject at least from the following list: Manual training, domestic science or art, stenography, type-writing, commercial arithmetic, additional drawing and music, and other courses introduced on the initiative of the principal and approved by his official superiors.

In the second year the uniform prescriptions should be: English, (5); manual training for boys and domestic science and art for

¹"The requirements for the academic diploma, which is issued only to students taking the Department's preliminary and academic examinations, are as follows: English, 13 credits; mathematics, 10; history, 8; science, 10; elective, 31. For the classical academic diploma: English, 13 credits; mathematics, 10; history, 5; science, 5; Latin, 20; a second foreign language, 15; elective, 4. These requirements went into effect June 1, 1909, and are continued in the syllabus of 1910." Page 15 of the Annual Report for 1910 of the Department of Education, State of New York.

girls, (4);¹ drawing, (1); music, (1); physical training, (2); Assembly, (1); total, fourteen. The alternative choices for this year should lie, as before, between a foreign language and algebra or geometry, (5). The list of elective subjects from which two subjects should ordinarily be chosen is the list of the subjects of the first year increased by a second year's offering in each, and, in addition, Greek, Spanish, History of "Modern Europe to 1066," economics, bookkeeping, commercial history and geography, commercial English, commercial law, history of music, history of art, musical composition, mechanical drawing, designing, and other courses introduced on the initiative of the principal, and approved by his official superiors.

In the third year, English, (5); physical training, (2); and Assembly, (1), should be the only absolute prescriptions. The alternative subjects would be a third year of foreign language or advanced algebra and solid geometry, (4). Additional subjects should be open to election. These should include all subjects of the first and second years and continued courses in such subjects. In addition, the electives of this year should include "Modern History since 1066."

In the fourth year, United States history and civics, (5); physical training, (2); and Assembly, (1), should be prescribed for all.

These recommendations, it is noticed, omit as absolute prescriptions for all pupils courses in foreign languages and mathematics. A minimum amount of work in each of these fields can wisely be included in the majority of the suggested courses of study recommended, but in our opinion graduation from the public high schools ought not to depend *for every student* on passing courses in either of these departments. We reiterate that in our opinion the function of the high school is to take any youth who may come to its doors and give him the best and most complete training his peculiar nature, endowment, and previous education may make most profitable for him and for society at large. For many pupils, a foreign language, and algebra and geometry, as taught in the high schools, yield no adequate returns and consume much valuable time and effort that may better be devoted to other subjects. For such pupils, a by-way which leads to the same final goal should be provided. In other words, we view the program of studies solely as a selective agency for realizing desirable ends, not as a list of subjects to be incorporated into the experience of every individual—the program of studies should be adjusted to individual needs; not individuals to the program of studies.

Under the present arrangement in New York City every first-year pupil is expected to pursue and complete work aggregating forty-six "points." These leave but 104 "points" for the following three years,

¹ Of course, if these subjects have been elected and passed in the first year, they should not be required here. Moreover, in cases in which the individual finds it impossible to pursue this subject and at the same time prepare for the college of his choice, he should, on the advice and consent of the principal, be permitted to substitute another subject.

or an average of thirty-five periods per year, or seventeen and a half points per term. The work of the high school should become progressively more extensive and intensive with each succeeding year, not less exacting. The unwisdom of thus overcrowding the curriculum of the first year is all the more apparent when it is recalled that nearly every subject undertaken by such pupils lies in fields that are strange to them and as yet unexplored.

It is apparent, therefore, that the work of the first year, as at present organized, should be considerably lightened by permitting to individuals greater freedom of election of studies, and by distributing over the other three years a portion of the requirements now placed in the first year.

To render the administration of the courses of study more flexible and, therefore, more serviceable to larger numbers of boys and girls, we recommend, in recapitulation, the following:

1. That not to exceed 55 per cent. of the requirements for graduation be prescribed by departments or subjects.

2. That principals be given greater authority to adjust the course of study to local needs and to the needs of individual students.

3. That principals, in conjunction with their respective corps of teachers, be encouraged to make careful studies of their community needs and to recommend to the Board of Superintendents desirable modifications in the course of study to be employed in their particular schools.

4. That supplementing the printed program of studies (course of study) suggestive subcourses, each planned to provide for both concentration and dispersion of effort, be provided for pupils, and that each pupil be encouraged to elect such a subcourse.

5. That before graduation each pupil be required to take at least three years of work in some subject or department other than English.

6. That foreign language study and mathematics be not included in the absolute prescriptions for graduation, but that an alternative choice of these two subjects be permitted, and that, on the advice of the principal, neither be prescribed.

7. That the only absolute prescriptions of subjects shall be:

(a)	English	three years, yielding	15	credits, or	30	"points"
(b)	Introductory social science.....	one year	" 4	"	" 8	"
(c)	U. S. history and civics.....	" "	" 5	"	" 10	"
(d)	{ Manual training for boys,	" "	"	"	"	"
	{ Domestic science for girls	" "	" 4	"	" 8	"
(e)	Introductory natural science	" "	" 4	"	" 8	"
(f)	Physical training	four years	" 8	"	" 8	"
(g)	Assembly	" "	" 4	"	" 4	"
(h)	Music	two years	" 2	"	" 2	"
(i)	Drawing	" "	" 2	"	" 2	"
			48		80	

8. That, distributed by years, the work shall be prescribed, alternative, or elective, as follows:

	Periods Prescribed	Periods Alternative	Periods Elective
(a) First year	18	5 or 0	3, 4, or 5
(b) Second year	14	5 or 0	6, 8, or 10
(c) Third year	8	4 or 0	18, 20, or 22
(d) Fourth year	8	0	18, 20, or 22
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Total prescribed	48 periods.		

2. The "Special Courses" and the Special Schools

(1) Availability

The aim of each special course within the general schools and the special schools themselves is obviously to provide instruction and training for boys and girls whose aims are rather definitely conceived or fixed. Such curricula or schools presuppose that the dominant interests of the individuals entering them have already been revealed, or that economic resources at the command of such students will not permit further general study. In preceding analyses these classes of persons were found to include six easily distinguishable groups, namely: (1) Those desirous of entering colleges of liberal arts and sciences; (2) those planning to enter higher technical schools or colleges, or to enter positions in industry leading to directive activity; (3) those hoping, immediately on completing the high school, to engage in directive business undertakings; (4) those seeking to fit themselves for subordinate positions in the offices of the business world; (5) those preparing to teach in the public schools; and (6) those who are destined to engage in the more mechanical aspects of business and whose resources and abilities enable them to remain in the high schools only a portion of the usual four-year term. Hence, a complete offering in any school system should include special curricula or special schools for these six types of persons. The question here is: How available and adaptable are instruction and training for these distinct classes in New York City?

For Group 1 (those preparing for admission to colleges of liberal arts and sciences) New York City provides no avowedly distinct and differentiated courses or schools. The general course in each school, however, through a wise selection of elective studies, enables all who desire to go to college to prepare for the colleges of their choice. Since the general course is provided in seventeen high schools, the interests of this class are well conserved. The scope and intensiveness of the work offered here have already been discussed and need not be reconsidered. They are ample.

For Group 2 (those who aspire to advanced training in higher technical or engineering schools or colleges and those who expect to enter the field of industry directly from the high school and assume there the responsibilities of draftsmen or mechanics) opportunities for obtaining the training desired are provided in four high schools. These are Stuy-

vesant, in Manhattan; Manual Training and Bushwick, in Brooklyn; and Bryant, in Queens.

It is evident that the availability of special courses or special schools offering instruction of the kind now under consideration is not sufficient to meet the real needs of Greater New York. It seems indisputable, too, that, were facilities provided in The Bronx, in the Borough of Queens in at least one school in addition to Bryant, and in the Borough of Richmond, large numbers of boys would elect such curricula. The situation is aggravated by the fact that in the general course no manual training is available for any of the pupils in New York City. For most boys the choice is to travel long distances and elect a school with a four-year course in manual training or accept the offering (without manual training) of the school near at hand and make the best of it. It can scarcely be doubted that all except those who possess a decided bent and with exceptional decision of character will accept the alternative that demands the lesser sacrifice and effort.

We, therefore, recommend (1) that as speedily as possible manual training high schools be established in The Bronx, and in Richmond, and that additional schools of this type be provided in Queens, or else (2) that the subject of manual training be introduced as a course parallel to the general course in as many schools as possible in each of the five boroughs of the City.

Respecting the scope and intensiveness of the work now provided in the special courses or special schools, considerable adverse criticism is justifiable. The study of English through fourteen periods distributed over the four years is not sufficient to satisfy the demands of contemporary culture and business. The arguments for rendering the course here more intensive are the same as those set forth respecting the study of English in the general course (pages 273 ff), and need not be repeated. We are, therefore, convinced that not fewer than four periods per week during the entire four years should be provided in this subject.

In the light of practices elsewhere, and in view of the technical purpose of the courses in manual training offered in New York City, we regard the number of periods devoted to mechanical drawing and to shop work as inadequate. We, therefore, recommend that not fewer than four periods per week during the entire four years be devoted to the former subject and not fewer than eight double periods per week throughout the entire four years be devoted to shop work. The course in English and United States history and civics, and the fourth year's offerings in chemistry and physics, should extend through five periods per week in accordance with the principles and conclusions presented elsewhere (page 276).

We recommend, further, that the following subjects be accorded a place in the special manual training course: Physical and industrial geography, industrial history, economics; and, in the fourth year, intensified specialized courses in architecture, surveying, electricity, forging,

foundry work, pattern-making, cabinet-making, and natural science, to the end that the professedly technical course may afford technical training.

In a special technical curriculum the demand for flexibility is satisfied if opportunity be given to specialize somewhat closely in one or two differentiated aspects of the purely technical work, and if all other prescribed subjects be taught with conscious reference to the special aim of the course. On the whole, so far as the printed course of study for the manual training high schools in New York City discloses, and the observed practice in the four schools indicates little flexibility of these kinds is provided. In the manual training course of the Bryant High School alone is any considerable attempt made to differentiate the instruction in the semiacademic subjects to serve the peculiar purposes of the special course in which they appear. That is, in the manual training course in the Bryant High School, much of the instruction takes on a decided industrial bent, both as to content and as to method of presentation. The same thing is true in some respects and to a slighter degree in the work in science in the other manual training schools, but the differentiation is not decided. Indeed, in so far as the same subjects appear in both the manual training schools and the general course of the other schools in New York City, the work carried on in the Stuyvesant High School and the Manual Training High School of Brooklyn differs little in character from that found in the general course.

We are, therefore, decidedly of the opinion that a special course or a special school having a distinct and definite aim should provide instruction and training that are clearly relatable to that aim. Such special aim involves, therefore, differentiation in subject matter, in topics to be selected within the chosen subject matter, and in methods of presentation. We reiterate the statement that in our judgment the only valid criterion for selecting the material to be presented and in deciding upon methods to be used is dependent upon the aim to be realized.

The provision made in New York for members of Group 3 (those seeking to fit themselves for directive positions in the commercial and business world) is found in the two schools—the High School of Commerce in Manhattan, and the Commercial High School in Brooklyn. Since a special report has been made by Assistant Superintendent Thompson on this aspect of high school work, it need not be considered here.

The provision made in New York for members of Group 4 (those seeking to fit themselves for subordinate positions as clerks, secretaries, stenographers, and accountants in offices in various lines of professional, commercial, and industrial business) consists of a three-year commercial course running parallel to the general course in eleven schools having the general course, and also in the Commercial High School in Brooklyn. A discussion of the aim, scope, and character of the work in these courses also falls within the special report on commercial education by Assistant Superintendent Thompson. See his report.

Group 5 (those students seeking to prepare themselves for admission

to the city training schools) may, through judicious election of subjects, secure the requisite training in any high school offering the general course. This group of individuals is, therefore, limited in its opportunities only as the general course is limited in its availability. Hence, the criticisms and recommendations already made (on page 269) are supported and emphasized by a consideration of the needs of this group.

Finally, there is Group 6 (those pupils whose stay in the high school must be relatively short, and who will enter subordinate office positions, clerkships, and industrial vocations). For these classes New York City at present provides no satisfactory and adequate instruction and training. We are thoroughly convinced that the best interests of these pupils, both as individuals and as members of a complex social organism, can best be served if they are given an education that is at the same time broad in outline and intensely practical. Moreover, we sincerely doubt the educational, social, or vocational wisdom of prescribing for members of this group some of the subjects that possibly may reasonably be exacted of members of the other groups. What these persons wish, and what they ought to be permitted to secure, is an education that will enable them quickly to enter positions in the business world, to adjust themselves to its requirements without undue friction and loss of time, and to command from the outset a reasonable living wage. In addition, the demands of personal culture and of social welfare require that all shall be given a foundation of knowledge that will enable them to appreciate and enjoy the best of the world's art, literature, science, history, and contemporary activities, and (for the girls) instruction and training in the ideals and functions of home-making and motherhood.

The only provision New York City makes for meeting directly the real needs of the members of this group of pupils are the technical courses (five in number) for girls found in the Washington Irving High School. (Certain experimental courses have recently been undertaken in the Wadleigh High School.) All other instruction that might be made to serve directly the interests of this group is either so hedged about with prescribed work of a character not adapted to the aims, capacities, and ambitions of the pupils of this group; is deferred in the course to so late a period; or else is made so generally unavailable because of its incorporation into the courses of study of so few schools that the offerings must fail almost completely in serving the needs of many students of the type under consideration.

In view of these facts we urgently recommend that principals of the various schools be given authority to organize courses that seem to them best adapted to meet the needs of the pupils of this class, and that such courses be offered as free electives, and in lieu of the present prescribed subjects to all whose high school courses are to end before the completion of the regular high school course of four years.

In particular, we recommend that technical curricula, similar to the courses at present provided in the Washington Irving High School;

that "appreciation courses," such as are at present being undertaken as extraordinary courses in the Wadleigh High School; and that elementary courses in industrial, commercial, and business subjects be provided much more extensively than at present throughout every section of the city. We do not advocate uniformity in courses or in methods of presentation throughout the various schools, but, on the contrary, urge that the real aspirations and needs of the pupils attending any given school shall first be tested and discovered, and that the courses and methods shall then be adapted to the realization of the ideals set up.

In summarizing, therefore, we recommend that the special schools or special curricula leading to clearly distinguished goals be increased in number; be distributed more evenly over the various districts of the city; and be made more extensive in the scope of their offerings and more special or intensive in the lines of work each professes to emphasize. In particular, we recommend that opportunities for pursuing courses in manual training for boys, technical courses (work) for girls, elementary commercial branches (for both boys and girls), and general "appreciation courses" for both boys and girls be multiplied, and that principals of schools be given more freedom in organizing the work so as better to adjust the instruction to the professed aims of the curricula.

VII—Summary of Recommendations

The following is a complete summary of the recommendations made in this report:

A. Respecting the General Course of Study

- I. It should be rendered more available to all young people of the city by means of—
 1. Several additional high schools of different types and so distributed throughout the several districts of the city as to meet the needs of the pupils for whom they are intended.
 2. Giving serious consideration to the possible plan of defraying the expenses of transportation of those pupils who reside beyond walking distance, and for whom the cost of transportation is a barrier to obtaining a high school education.
- II. It should be better adapted to the varied needs of pupils by—
 1. Extending the scope of studies to include—
 - (a) Manual training.
 - (b) Domestic science and art in every school.

- (c) Applied art for girls.
 - (d) Additional commercial subjects.
 - (e) Advanced courses in mathematics, including the "Principles of Statistics," "Principles of Actuarial Science," and kindred subjects.
 - (f) Intensified specialized courses in natural science.
 - (g) "Appreciation" or general information courses in the departments of the older academic subjects.
 - (h) Specialized courses in Music and Fine Arts.
 - (i) Courses in musical appreciation and art appreciation.
 - (j) Mechanical drawing.
 - (k) A course in introductory social science, including local government, local industries, study of vocations, history of the recent past, and current topics.
 - (l) Household economics, including household accounts, purchasing, dietetics, home decoration, home architecture, household sanitation and household chemistry.
2. Giving a greater intensiveness and continuity to some of the instruction by providing—
- (a) That the work in English be allotted four or five periods throughout the entire course.
 - (b) That plane geometry be assigned five periods per week in the second year, to conform to the standards set by the state.
 - (c) That algebra and geometry of the third year be organized into two half courses of four periods each for one term.
 - (d) That as speedily as possible the recently issued syllabi in history be adopted by all schools.
 - (e) That all science courses after the first year be accompanied by individual laboratory work on the part of the pupils, and that to facilitate this work such science courses be assigned not fewer than five periods per week.
 - (f) That courses in music, art, and drawing be multiplied and be assigned three or four periods per week.
 - (g) That oral expression be given much attention in every class exercise, particularly in class exercises in English, and that a three-period course be made available in the third or fourth year.

- (h) That physical training provide a minimum of theory and a maximum of practice, exercise, and games.

3. Making the administration more flexible by—

- (a) Prescribing for graduation a much smaller amount of rigidly specified work than at present, such prescriptions to include only—

1. Three years' work in English (including oral expression), aggregating fifteen periods.
 2. One year's work in introductory natural science, aggregating four periods.
 3. One year's work in introductory social science, aggregating four periods.
 4. One year's work in United States history and civics, aggregating five periods.
 5. One year's work in manual training for boys or domestic science and art for girls, aggregating four periods.
 6. Two years' work in drawing, aggregating two periods.
 7. Two years' work in music, aggregating two periods.
 8. Four years' work in physical training, aggregating eight periods.
 9. Assembly throughout the course, aggregating four periods.
- Or a total of forty-eight periods.

- (b) Prescribing by specific subjects, for the respective years, not to exceed the following:

1. First year—

	Pe- riods
English, including oral expression	5
Introductory natural science.....	4
Introductory social science.....	4
Physical training	2
Drawing	1
Music	1
Assembly	1
	<hr/>
Total	18

2. Second year—	
English	5
Manual training or ¹ domestic sci- ence and art	4
Physical training	2
Drawing	1
Music	1
Assembly	1
<hr/>	
Total	14
3. Third year—	
English	5
Physical training	2
Assembly	1
<hr/>	
Total	8
4. Fourth year —	
United States history and civics..	5
Physical training	2
Assembly	1
<hr/>	
Total	8

- (c) Making foreign language study alternative with mathematics, and, upon the advice and approval of the principal of the school, waiving the alternative entirely for such individuals as can profit more by taking some other subject.
- (d) Encouraging principals, in conjunction and co-operation with their respective corps of teachers, to study local needs and to modify their courses of study and programs of study in accordance with their findings.
- (e) Organizing the program of studies into a series of suggestive parallel curricula, each containing the prescribed subjects, and, in addition, elective subjects, arranged so as to give an intensive training in some one or at most two fields of knowledge.
- (f) Issuing more than one type of diploma—for example, the Regents' high school diploma and the New York City high school diploma.

¹ Unless the subject has already been elected in the first year.

B. Respecting the Special Courses or the Special Schools

- I. They should be made more available to all young people of the city by means of—
 1. Several additional high schools distributed throughout the several districts of the city.
 2. The incorporation of additional special or technical courses parallel to the general course in the general high schools.
 3. The incorporation, as electives in the general course, of elementary courses in semitechnical work.
- II. The high schools should be made more adaptable to the varied needs of pupils by—
 1. Extending the scope of work in each type of school.
 2. Differentiating the subject matter and instruction of the included academic subjects so as to give them a decided technical bent.
 3. Giving a somewhat greater intensiveness than at present to the prescribed academic courses.
 4. Permitting, during the third and fourth years, individual specialization in aspects of the work that have aroused peculiar interest.
 5. Encouraging principals of high schools freely to organize special courses and special curricula to meet the needs of pupils whose stay in school must be short, and whose interests are best served by giving them "appreciation courses" and much practical knowledge and training.

THE SYSTEM OF GENERAL SUPERVISION AND THE
BOARD OF EXAMINERS

CORRESPONDENCE BETWEEN THE COMMITTEE OF SCHOOL
INQUIRY AND PROF. PAUL H. HANUS, AND PROFESSOR
EDWARD C. ELLIOTT CONCERNING PROF. ELLIOTT'S REPORT.

Letter from the Chairman of the Committee on School Inquiry to Professor
Edward C. Elliott proffering questions.

AUGUST 13, 1912.

PROF. EDWARD C. ELLIOTT,

*University of Wisconsin,
Madison, Wis.*

DEAR SIR:—The Committee on School Inquiry, after reading the galley proof of your report rendered to it, feels that the report might be strengthened in certain particulars, as to which it desires to offer you the following suggestions with the request that you supplement the report as indicated. If you are able to amend and supplement the report as desired, the Committee requests that you be good enough to forward to it typewritten amendments to the galley proof now in hand, which the Committee will then transmit to the printer for new galley.

1. Will you please state the number of individual conferences you held with principals and with members of the supervisory staff, the number of schools you visited, and the reports, records, statistics and all other data upon which you based your conclusions and recommendations?

2. Will you please state specifically in what way New York schools would be improved if a larger proportion of principals were appointed from those who have not lived in or been trained in New York City?

3. Please state how the efficiency of principals and superintendents who had training elsewhere compares with the efficiency of those who have received their training in New York City.

4. Please state what it is in the training and qualification of those appointed from New York City that makes them preferable for principalships and supervisory positions to those coming at the time of appointment from points outside of New York.

5. Would it not be well to add to your discussion of the duties of

district superintendents a table showing the various percentages of time consumed by district superintendents in non-supervisory work?

6. Please make a full statement of the bad results you observed, due to the fact that applicants for appointment as teachers and teachers seeking promotion in the City schools are forced to make special preparation for examination.

7. Will you not include a statement of the standards you recommend for use in rating the efficiency of principals?

8. Will you please state what it is that leads you to assert that the special teacher problem has arisen in New York City because there is a dearth of qualified and competent teachers in the regular classes? How many teachers of special branches present themselves at examinations given for regular teachers? What proportion of them fail? And how do they compare with regular teachers?

Please be good enough to let me know by return mail how soon I may expect from you the material requested.

Respectfully,

JOHN PURROY MITCHEL,

Chairman, Committee on School Inquiry.

Letter from Dr. Edward C. Elliott acknowledging receipt of the letter from the Chairman of the Committee on School Inquiry proffering questions.

KIESLING, WASHINGTON, R. F. D. No. 1.

AUGUST 27, 1912.

MR. JOHN PURROY MITCHEL,
President of the Board of Aldermen,
City of New York.

MY DEAR SIR:—For more than a fortnight I have been absent from my office. Your letter of August 13th has just reached me, having been forwarded from Madison.

The exigencies of travel prevent me from preparing, at this time and place, the supplementary report you have requested. As soon as I return to Madison—about September 15th—I shall be glad to give this matter my detailed attention.

I am presuming that you desire that the suggested additions to my report be submitted directly to Professor Hanus.

Very respectfully yours,

EDWARD C. ELLIOTT.

Reply from Professor Edward C. Elliott to letter of the Chairman of the Committee on School Inquiry, dated August 13, 1912.

THE UNIVERSITY OF WISCONSIN

Madison

NOVEMBER 1, 1912.

PROFESSOR PAUL H. HANUS,

*In charge of Educational Aspects of School Inquiry,
51 Chambers St., New York City.*

MY DEAR SIR:—On August 13, 1912, Honorable John Purroy Mitchel, president of the Board of Aldermen, and chairman of the Committee on School Inquiry, addressed a communication to me, requesting that my report on "The System of General Supervision and the Board of Examiners" be amended in certain particulars, and supplemented according to specific suggestions.

President Mitchel's letter did not reach me until August 27th, by reason of my absence from Madison. I replied, on August 27th, to President Mitchel, from Spokane, Washington, that the exigencies of travel prevented me from complying immediately with his request, but that I would do so immediately upon my return to Madison—which would be about September 15th. I also indicated to him my assumption that the detailed reply to his communication would be submitted to him through you. This procedure, I take it from your several recent communications, is the one mutually agreed upon by President Mitchel and yourself.

Upon my return to Madison in September I prepared tentative replies to the several questions and suggestions presented by President Mitchel. Whatever delay that has taken place in the submission of the completed replies has been due entirely to the non-arrival of the second galley proofs: obviously, I could not answer the several questions without having before me either the original copy of my report or the printed galleys.

President Mitchel, in his letter of August 13th, presented a series of eight questions. I am dealing with these questions seriatim.

I. Will you please state the number of individual conferences you held with principals and with members of the supervisory staff, the

number of schools you visited, and the reports, records, statistics, and all other data upon which you based your conclusions and recommendations?

a. It is impossible for me to state with absolute accuracy the number of individual conferences that I had with principals or members of the supervisory staff, including the members of the Board of Examiners. On galley 358 of the second proof I have noted the number of elementary schools I visited (twenty-one). In each case I conferred with the principal of the school. In a number of instances I returned to the school for a second visit, and, in a few cases, I made a third visit, in order to secure additional information or to verify doubtful points.

In addition to the formal conferences that were held with the district superintendents and the directors of special branches, I held a large number of individual conferences with members of the supervisory staff, other than principals. I kept no account of the actual number of these conferences. During my period of service for the School Inquiry I did a considerable portion of my work at the Board of Education Building. I was in constant conference with Superintendent Maxwell, with the Associate Superintendents, with the members of the Board of Examiners, and with other members of the supervisory staff, whose offices are in that building.

It seems to me that precise statement as to the number of these conferences is immaterial.

b. The number of elementary schools visited is stated on galley 358 as now corrected.

c. This portion of the question is confusing. All of the records, statistics and other data upon which my conclusions are based are indicated in my report.

2. Will you please state specifically in what way New York schools would be improved if a larger proportion of principals were appointed from those who have not lived in or been trained in New York City?

In my judgment this question is already satisfactorily answered by the third paragraph on galley 364 of the second proof. I would, if directed to do so, elaborate the argument indicated in the aforementioned third paragraph. This, however, does not seem to be necessary for the support of the principle of the argument. The public elementary schools of New York have not been benefited in any continuous way by the wealth of experiment, experience and progress of education in other states and cities. An impartial observer is at once struck by a characteristic attitude of mind on the part of principals that concentrate their attention upon simply "holding the job." The largest single benefit that would accrue by the appointment of principals who had not been educated or trained in New York would be the importation of new ideas and new standards of accomplishment, especially the latter, and, consequently, a development of the spirit of emulation among schools now so noticeable by its absence.

3. Please state how the efficiency of principals and superintendents who had training elsewhere compares with the efficiency of those who have received their training in New York City.

On account of its ambiguity, this question is difficult of satisfactory answer. It is assumed that the question refers specifically to the comparative efficiency of the two groups of principals and superintendents now in service in the New York School system; that is, the larger group of those trained in New York City, and the smaller group of those trained elsewhere. It is presumed that this question was prompted by my discussion of the selection of elementary school principals.

On the basis of the inquiry, this question cannot be answered. To answer it would involve an extensive and detailed study such as was not possible during my connection with the School Inquiry. Furthermore, a proper answer would involve a comparison of the character and worth of the service of particular individuals. A special effort was made in the report to avoid all such personal parallels.

In that portion of the report dealing with the matter with which this question is concerned, the issue is raised as to whether or not the existing policy of inbreeding the supervisory staff is a wise one. Ample evidence has been adduced to prove that this inbreeding does exist, and to a large extent. That such a policy has a marked detrimental influence upon the growth and progress of education is universally admitted. City Superintendent Maxwell admits it with regard to teachers. Will not his argument hold good with regard to principals and other supervisors? This argument is referred to and quoted in the report.

However, the comparison projected by this question would not touch the fundamental principle, which is, that, under the present system the New York schools do not attract, and never have attracted to principalships men of promise and performance from elsewhere.

4. Please state what it is in the training and qualification of those appointed from New York City that makes them preferable for principalships and supervisory positions to those coming at the time of appointment from points outside of New York.

I do not understand this question. In fact, the argument of my report emphasizes that persons appointed from New York City are not to be exclusively preferred for principalships and supervisory positions.

5. Would it not be well to add to your discussion of the duties of district superintendents a table showing the various percentages of time consumed by district superintendents in non-supervisory work?

In my study of the work of the district superintendents I did attempt to prepare a table showing the various percentages of time consumed by the several district superintendents in non-supervisory work. This table was based on the information furnished by the district superintendents in their replies to the letter sent by the School Inquiry, on September 26th, 1911; however, owing to the widely different interpretations by the district superintendents as to what constituted super-

visory work, the arrangement of such a table was given up. I have stated, on galley 369, the limits in estimation of time consumed.

The replies to the letter of September 26th, 1911, are, I take it, yet on file in the office of the Committee on School Inquiry. If these replies are sent to me I would endeavor to prepare a table in accordance with the request. It is not clear to me, however, wherein such a table would add materially to the argument.

6. Please make a full statement of the bad results you observed, due to the fact that applicants for appointments as teachers and teachers seeking promotion in the City schools are forced to make special preparation for examination.

This question appears to have been prompted by my statement in the sixth paragraph of galley 378, wherein mention is made of the dangers to the efficiency of the teaching staff arising from the system of cramming and coaching for examinations.

The principal evil result of this cramming and coaching is evidenced in the standards of oral expression of a very large number of elementary school teachers. This fact has been commented upon frequently by the members of the Board of Education in their official reports. That individuals, especially those for whom English is not the mother tongue, are able to acquire an artificial attainment in the use of English whereby they pass the written and oral examinations is admitted by principals and district superintendents, as well as by the members of the Board of Examiners. I do not hesitate to state, on the basis of my own personal observations, which could be easily verified, that there are to-day hundreds of teachers in the elementary schools of the city whose services would not be approved in any progressive school system, primarily on account of the use of broken, highly accented, and incorrect English.

The second evil which has grown up in connection with the efforts of coaching institutions that exist in New York is reflected in the attitude of the teachers themselves that the professional examination conducted by the Board of Examiners is pure form and that all that one needs is to comply with the letter and not with the spirit of a thorough understanding.

A third evil, which may not be neglected, and which must be considered in connection with the present systems for renewal of license and for the approval of service as fit and meritorious, is the creation of a prevailing opinion that the passing of the examination carries with it a guarantee of appointment; and that appointment means permanency of tenure without reference to quality of service.

7. Will you not include a statement of the standards you recommend for use in rating the efficiency of principals?

The question of standards for rating teaching and supervisory efficiency is one to which I have given a considerable share of professional and scientific attention during the last four or five years. To adapt the series of general standards which I have devised to the

practical situation of the supervision of the schools of New York City, as this affects principals, would require a considerable amount of further study and investigation. I would not hesitate to undertake to do this if opportunity were afforded.

8. Will you please state what it is that leads you to assert that the special teacher problem has arisen in New York City because there is a dearth of qualified and competent teachers in the regular classes? How many teachers of special branches present themselves at examinations given for regular teachers? What proportion of them fail? And how do they compare with regular teachers?

I assume that the assertion referred to is that to be found at the bottom of Galley 370. In addition to the evidence contained in section four of the report, this statement is based upon,—(1) The personal and official testimony of the members of the Board of Examiners (see Appendix X attached); (2) Upon the statements made by the directors and assistant directors of special branches at the conference held on April 10th, 1912; (3) Upon the evidence to be found in Table XIII of the report.

The last three parts of this question are confusing. They seem to me to be wholly irrelevant to the first part of the question.

As you will see from the corrected second galley proof, I have made considerable modification in the first paragraph of Galley 358. These modifications follow the suggestions made by question No. 1 of President Mitchel's letter.

Speaking frankly, I do not see that the questions presented by President Mitchel raise any essential issue which has not been adequately treated and supported in the report. I shall be glad to assist you in any further modification that may appear to you desirable. I cannot, as you will readily see, undertake to carry forward extensive supplementary investigation to answer questions; for instance, investigations such as would be necessary completely and properly to answer Question 7.

I am.

Very respectfully yours,

EDMUND ELLIOTT.

APPENDIX X

ACCOMPANYING ANSWER TO QUESTION 8

In the examination for license to teach Italian in elementary schools, which was the first examination held by the Board of Examiners for such license, 43 applicants appeared, of whom but seven were successful. Similar results have been experienced in former years in the case of newly established licenses and newly published conditions of eligibility. No system of examinations can be fairly judged until sufficient time has been afforded to intending teachers to adjust themselves to the requirements.

"In the case of the license to teach music, however, this adjustment seems not to have been yet accomplished; for out of 44 applicants in 1906-7, but seven were granted the license. The chief reason for this high percentage of failure was insufficient preparation, rather than ineligibility. . . ."

"In the sense of license for Physical Training the conditions are even less satisfactory. Owing to a chronic deficiency of teachers in this subject, it was necessary to hold two examinations during the year. These examinations yielded a list of 17 out of 28 applicants—a high percentage of successful candidates, but an insufficient number of teachers. The standards set in the examinations were indeed high, but they were no higher than the importance of the subject demands. Nor would it be advisable to reduce the eligibility requirements, though a considerable number of applicants in each examination were declared ineligible. The reason why so few eligible candidates present themselves in this subject is obvious; the average salary paid elsewhere to teachers of physical training who are normal graduates of three years' standing is higher than the initial salary paid to teachers of this specialty in the City of New York."

(Examiner Walter L. Hervey,—Ninth Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York for the Year Ending July 31, 1907. pp. 394-395.)

"In connection with the tabulation of the number of applications received for drawing and for kindergarten work, as given already, it should be stated that the applications referred to, though not acted upon till the fall of 1906, were made in June of that year. I have not been chairman of the committee having charge this year of those two grades of licenses. With respect to cooking and shopwork licenses, it is to be remembered that the supply of acceptable teachers of these subjects is hardly equal to the demand. I am not convinced, however, that any lowering of the qualifications for eligibility to apply for those licenses is called for. I would suggest to you that a positive desideratum is a fuller knowledge of the work of the public schools on the part of the instructors and the pupil-teachers in the three or four local

institutions which mainly supply our teachers of cooking, drawing, and shopwork; and that a correspondence on the subject might lead to a more practical and definitely directed training of teachers for the work to be done."

(Examiner George J. Smith,—Ninth Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York for the Year Ending July 31, 1907, p. 405.)

"The number of applicants for the license was small and the quality, except in the case of the successful candidates, was very poor. The labor of examining the candidates for this license is out of proportion to the results obtained. As long as the salaries for the elementary manual training teachers are lower and the duties more strenuous than those of the high school teachers in our own system, we cannot hope for better results in any of the examinations for manual training license in elementary schools. A change in the requirements so that elementary school teachers could more easily become eligible for license as teacher of manual training in elementary schools might work beneficially."

(Examiner Jerome A. O'Connell,—Tenth Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York for the Year Ending July 31, 1908, p. 243.)

"An inadequate supply of elementary teachers of physical training and elementary teachers of music is not a new phenomenon, but the shortage is now more marked than ever before. Only a small number of eligible applicants present themselves for examination, and of those only a few are found qualified. To augment the supply, either the requirements must be lowered or the salaries must be increased."

(Examiner J. C. Byrnes,—Eleventh Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York for the Year Ending July 31, 1909, p. 274.)

"For regular licenses in manual training, licenses to teach ungraded classes, and licenses to teach in truant schools, the applicants were few in number, and, in general, poor in quality. Three out of every four applicants were rejected. In view of the needs of the schools, there should have been four times as many licensed as were licensed. In manual training the demand for new teachers in the elementary schools arises chiefly from the constant drafting off of such teachers from the elementary into the high schools.

(Examiner Walter L. Hervey,—Ninth Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York Ending July 31st, 1909, pp. 276-277.)

"The exceedingly small proportion of the successful to the successful applicants for this license, and in fact the small number of ap-

plicants, points to a situation which calls for remedy. I refer to the difficulty of obtaining qualified teachers of drawing. The tests given have not been unduly searching; on the contrary, they have been rather lighter, and more leniently rated, than is desirable in examining for teachers in this line of work. But too often it happens that those few applicants who meet the very moderate standard we are able to maintain in the written and practical tests are unable to pass the test of giving a satisfactory lesson in a classroom. Some lack of technical skill may be forgiven a person who knows how to teach; but when both technical and teaching ability are wanting, there is no proper course open but to reject the candidates, even though there may be, as at present, several vacancies in the corps of teachers.

"I suggest that the incoming committee, with the co-operation of the supervisor of drawing, make a special effort to circulate among drawing teachers in this part of the country the announcement of the next examination, together with information as to the salaries paid and the other inducements to become members of our teaching force. Without some special effort the holding of further examinations for teachers of drawing would seem almost a waste of time. And if, after such effort, no considerable improvement in the situation is noted, a more liberal salary schedule must appear to offer the only means of continuing the work of the department of manual training and drawing with a promise of efficiency."

(Examiner George J. Smith.—Twelfth Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York for the Year Ending July 31, 1910, pp. 298-299.)

"Drawing—Elementary Schools.—Although twelve teachers were licensed for elementary drawing during the past year, another examination for such license will soon be necessary. Practically all of the elementary corps of drawing teachers are earnestly desirous of promotion to the high school service. It is perfectly patent to everyone familiar with the school system that, although the salaries of the elementary teachers of drawing are lower than those paid to high school teachers, the work of the elementary teachers of drawing is far more onerous and makes demands upon capacity, tact, and administrative ability much greater than the work of high school teachers of drawing. If the special subjects such as drawing, music, and physical training are to be kept at a high state of efficiency in the elementary schools, the salaries paid to the teachers of these subjects should be advanced beyond the salaries paid to teachers of the same subjects in the high schools; or perhaps, the salaries should be the same for all such teachers and they should be subject to assignment to one service or the other."

(Examiner James C. Byrnes, Thirteenth Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York for the Year Ending July 31, 1911, pp. 164-165.)

"Examination in Special Subjects.—An unusually well attended examination for license to teach Cooking (which should more properly be designated Household Economics, as the subject matter taught under this license is by no means of a merely culinary nature) resulted in a very satisfactory list of teachers. It is fortunate that this subject attracts candidates whose training and personality are certain to give them a wholesome and cultural influence over the girls who come under their instruction. It is no doubt this fact more than any other that has vindicated the wisdom of establishing this work in the public schools. If it were possible to secure for all the other 'special subjects' equally well fitted teachers, there would be little occasion for an outcry against 'fads and frills' in our school work; for in all these subjects the teacher counts for far more than mere material equipment can, however complete and excellent.

"In the case of shopwork it continues to be difficult to obtain thoroughly well-prepared teachers. The candidates, roughly speaking, fall into two classes: (1) Those who have a fair to good general education, but are relatively lacking in technical skill and practical experience in wood working; (2) those who excel on the practical side, but are deficient in education and in command of correct English speech. The needs of the schools have been such that we have felt obliged to accept teachers of both these classes, in spite of their obvious shortcomings. Most teachers of the second class were practical cabinet-makers or carpenters, who had served two years or more as substitute teachers of shopwork. I would argue that in future the issuing of substitute shopwork licenses to men of however great technical skill be refused unless their spoken and written English come up to a reasonable standard of correctness. The time to weed out the unfit, in respect of use of English, is when they present themselves for the lower grade of license. It should never be forgotten that in too many cases, under present conditions, a substitute teacher becomes, to all intents and purposes, a regular teacher from the day he enters a shop, and his pronunciation and use of English, if bad, produce from the first an undesirable effect upon the boys under his charge."

(Examiner George J. Smith, Thirteenth Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York for the Year Ending July 31, 1911, pp. 172-173.)

Classification of Questions of President Mitchel's letter of August 13, 1912,
supplied by Professor Elliott at the request of Professor Paul H. Hanus.

NOVEMBER 6, 1912.

PROFESSOR PAUL H. HANUS,
Harvard University,
Cambridge, Mass.

MY DEAR PROFESSOR HANUS:—After I had returned to you the corrected second galley proofs, and had sent the accompanying letters, I discovered that I had not complied with your request as to the classification of the character of the questions submitted by President Mitchel.

As you will recall, you had divided the questions into five general classes. The next paragraphs will contain my own adaptation of the questions to your classification:

- a. *Immaterial*
 - (1) As to the number of individual conferences.
- b. *Confusing*
 - (2) As to the appointment of principals from within and from without New York.
 - (4) As to the training and qualification of principals.
 - (8) As to special teachers (last three parts of the question).
- c. *Already answered or covered*
 - (1) As to reports, records, statistics, etc.
 - (5) As to percentage of time devoted by district superintendents to non-supervisory work.
- d. *Requiring further study and investigation*
 - (2) As to the appointment of principals from within and from without New York.
 - (3) As to the efficiency of principals and superintendents.
 - (7) As to standards for rating principals.
- e. *Worthy of consideration*
 - (1) As to number of schools visited.
 - (6) As to preparation for examination by teachers.
 - (8) As to the special teacher problem (first part only).

Very sincerely yours,

EDWARD C. ELLIOTT.



REPORT ON
EDUCATIONAL ASPECTS OF THE
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY
OF THE BOARD OF ESTIMATE
AND APPORTIONMENT

PART II

*Subdivision IV. The System of General Supervision and the
Board of Examiners*

A.—BOARD OF SUPERINTENDENTS

B.—DISTRICT SUPERINTENDENTS

C.—DIRECTORS OF SPECIAL BRANCHES

D.—BOARD OF EXAMINERS

BY

EDWARD C. ELLIOTT, PH.D.

Director, Course for Training of Teachers, University of Wisconsin;
Special Investigator, United States Bureau of Education

CITY OF NEW YORK

1911-1912

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THE SYSTEM OF GENERAL SUPERVISION AND THE BOARD OF EXAMINERS

I

PREFATORY STATEMENT

1. The General Scope of the Report
2. The Method of Inquiry
3. The Nature of School Control: Legislation, Administration, Supervision, and Inspection

1. The General Scope of the Report

This report concerns itself chiefly with the agencies that have immediate responsibility for, and direct oversight of, the organization and standards of accomplishment of the teaching staff; the agencies that determine, ultimately, the character of the programs of study (curricula), and hence, the extent to which the school instruction is adapted to the capacities and needs of the children of the city. It will, therefore, review more or less critically the activities and methods of those individuals whose principal attention is assumed to be devoted to directing and elevating standards of teaching, and to gauging the efficiency of teachers and pupils; that is, principals, directors of special branches, district superintendents, associate superintendents, City Superintendent, and the Board of Superintendents.¹

The important influence exerted by the Board of Examiners in the establishment of the initial qualifications of teachers necessitates a consideration of its methods and standards, as these impose responsibilities that must be met by the organized plan of the supervision of schools.

¹ The exigencies of the conduct of the Inquiry have made quite impossible a comprehensive study and treatment of all the important features of the situation. This portion of our report has endeavored to bring into proper perspective some of the most important items that seem to demand critical attention, with special reference to the elementary schools. Only the more fundamental aspects of the place of the principal in the supervisory organization are included. The details of the supervisory work of elementary school principals are discussed in Professor McMurry's report.

2. The Method of Inquiry

The Inquiry has based its presentations, conclusions and recommendations upon evidence primarily derived from:

a. *Documentary material*: including the annual reports of the City Superintendent of Schools, since 1899, together with the accompanying departmental reports; the minutes of the meetings of the Board of Superintendents for the past four years; the by-laws of the Board of Education; records of schools, teachers, and supervisory officers, filed in the record office of the City Superintendent of Schools.

b. *Special information and data*: furnished by the members of the supervisory and teaching staff in response to requests from us. The character of such special information and data are described in those sections of the report to which they pertain.

c. *Numerous individual and group conferences with the members of the supervisory staff.*¹

d. *Visitation of schools.*²

e. *A critical examination of the methods of work of the various boards*³ and individuals constituting the supervisory staff.

The principal effort has been to analyze into its leading factors the systematic supervision of the public schools of the city, and to judge these factors according to their own demonstrated merits. Contrary to the usual procedure, no detailed comparison of the supervisory organization and methods followed in New York with those of other large cities has been attempted. Even with adequate opportunity and facilities for such comparison there is grave doubt as to the worth of the conclusions to be drawn from such comparative study. A solution of the problem of effective supervision of schools in New York requires a treatment as distinctive as is the problem.

From the beginning the Inquiry has aimed at constructive schemes for the betterment of the organization and operation of the supervisory staff, rather than at criticisms of existing plans and practices. Nevertheless, constructive effort is closely linked to criticism; the character of the former is largely dependent upon the nature of the latter.

The main current of the recent public criticism of the school system has been directed against the defined authority, the competency, and the

¹ One formal conference of district superintendents was held on the afternoon of April 9th, 1912. Twenty of the twenty-six district superintendents were present. A similar conference of directors of special branches was held on the afternoon of April 16th, 1912. Eight of the nine directors and two assistant directors were present.

² Twenty-one elementary schools were visited.

³ Including the Board of Superintendents and the Board of Examiners.

spirit of the supervisory staff, individually and collectively. A fair investigation of the organization and methods of the supervisory direction of a school system of the origin, magnitude, and complexity of that of New York City, requires more than the analysis of formally prescribed duties or the criticism of elaborated modes of procedure, for the worth of this direction is largely conditioned by certain indefinite and intangible personal factors. The real duties of a superintendent, principal, or any other supervisor cannot be accurately defined in rules and regulations; the real accomplishment cannot be exhibited by statistical facts. Beyond question, the issues of real moment to the school system have been confused and distorted, and the community confidence has been undermined by the extraordinary volume of trivial discussion and criticism growing out of ignorance and bias, and inspired by certain organized self-interests. Public criticism, to have value, should be based on sound evidence and bulwarked by personal responsibility for its utterance. Everywhere in New York one encounters criticism; but in few places and in small quantity is testimony of worth volunteered.

3. The Nature of School Control: Legislation, Administration, Supervision, and Inspection

In order that the basic conceptions of the Inquiry as to the essential functions of the supervision of schools may be set forth, it is appropriate here to attempt to distinguish the four fundamental forms of *control* to which the schools of a modern metropolitan public school system are, and must be, subject.¹

(a) Legislative Control

is that form of regulation exerted by the authority possessing final governmental jurisdiction. In the case of schools belonging to a public educational system this control is usually centered in the State Legislature. The restrictions and obligations of legislative action are those defined by the fundamental laws—the state and federal constitutions.

(b) Administrative Control

is that vested in the agents created by legislative action, or recognized as such by an implied legal sanction. Boards of education, boards of trustees, superintendents, inspectors, etc., are common types of such agents. Administrative activities have, however, certain special characteristics which distinguish them from those which are legislative, supervisory, or inspectorial. They are, first of all, general and executive in their nature, in that they do not depend upon technical knowledge for their ready and successful performance. Furthermore, the duties and

¹For a further treatment of the several forms of control here indicated, see *Elliott, Edward C.: Instruction: Its Organization and Control*. In *High School Education*, edited by Johnston, C. H. (Chas. Scribner's Sons, New York, 1912.)

responsibilities of administrators are usually imposed and defined directly by law, or prescribed by an authority established in law for this purpose.

Competent administrative direction requires a broad appreciation of the function of public education in modern community life, a readiness and promptness of action for the establishment and preservation of those conditions that guarantee equality of educational opportunity, and a ready executive capacity for performing the customary duties of effective control, and for meeting new needs as they develop. It depends for its effectiveness upon methods that are general, clerical, and mechanical, rather than upon those requiring special, technical skill. It is non-technical, non-professional; it operates impersonally, and is, for the most part, regulated by the provisions of the educational code, the municipal charter, and the local regulations and by-laws.

This is the variety of control properly exercised by the Board of Education, and lay officials. Its attention centers in establishing and supporting schools, in providing adequate accommodations and equipment, in securing a sufficient number of properly qualified teachers, and, in observing the restrictions and requirements of the higher legislative authority.

(c) Supervisory Control

depends for its effectiveness upon agents possessing technical and expert knowledge of educational processes, and capable of employing that knowledge for the development and advancement of the institutions coming under their control.

Supervisory control is concerned with what should be taught, when, to whom, by whom, how, and to what purpose. It is professional and technical. It aims to establish and to maintain for the individual teacher and the individual pupil standards of worth and attainment. It is concerned, primarily, not with the machinery of education, but with the character and worth of its products. It centers its effort upon individuals. It is emphatically constructive, rather than merely executive. For its best results it demands the completest coöperation between the members of the teaching and supervisory staffs. For the proper exercise of this form of control superintendents, directors and principals should be held directly responsible and should be given entire freedom of action. It does not lie within the legitimate province of the Board of Education or of other municipal officers and boards.

(d) Inspectorial Control

is similar in nature to supervisory control, yet is to be distinguished from it. It is, also, special in character, and is based upon expert knowledge of the conditions and technic of successful and efficient instruction. It differs from the supervisory activity in that its primary purpose is not personal, constructive service. Its aim is toward an impersonal, objective

measurement of the results and worth of the school. It serves to appraise the products of administrative organization and supervisory direction, and, on the basis of this appraisal, to propose new standards and new methods. Thus, narrowly interpreted, an inspector's special function is to pass upon worth and efficiency. A supervisor must do this and more; he must raise the worth and increase the efficiency.

There has not been, up to the present time, any widespread recognition in American education of the great importance of the inspectorial form of control. Yet, as the public schools have expanded and have become more intricate in their organization, so much greater has become the necessity of means whereby the essential operations may be subjected to a checking and valuating process. The schools have lacked an audit that would exhibit how well that which is being attempted is being done; an audit that would reveal the degree to which the machinery of organization is adapted to its purpose; an audit that would display the essential facts of census, attendance and rate of progress of pupils, the accomplishments of teachers, and an analysis of the real cost in money of the several and numerous activities that enter into school education. The more important of these facts New York City does not know to-day.

This form of inspectorial control is one that must be exercised by duly constituted agencies distinct from those agencies or individuals who are primarily responsible for administrative and supervisory direction. Otherwise, there will be no impersonal judgments of worth founded on actual results and accomplishments.

Strictly speaking, each one of the several matters entering into the make-up of the school is subject, in some degree, to each one of the different forms of control indicated. There is legislative control of ideals, finance, buildings, teachers, instruction, discipline, and, in fact, all of the different features of organized education. There is, likewise, an administration, a supervision, and an inspection of each.

All of the evidence considered during the conduct of this portion of the Inquiry has revealed and emphasized this important fact, namely, that there seems to be nowhere, at least within the school system, a clear and conscious discrimination between those activities of control that are administrative in character, and those that are supervisory or inspectorial. The absence of this distinction in the minds of those charged with the main responsibility has been, it is believed, an important factor in retarding the progress and complicating the development of the public school system.

II

THE NEW YORK CITY SYSTEM OF SCHOOL CONTROL AND ITS GENERAL RELATIONS TO THE SUPERVISORY ORGANIZATION

1. Historical

2. The Revised Charter

3. The General Scheme of Control

4. The General Principle of the Existing Plan of Control
5. The General Nature of the Existing Plan of Control

1. Historical

A brief review of the recent historical development of the existing plan of school organization and control will serve as a basis for an understanding of many of the characteristic features with which this portion of the Inquiry has had to deal.

The Greater New York charter (chapter 387 of the Laws of 1897) united and consolidated into one municipality the former city of New York, comprising what is now the Borough of Manhattan and the Borough of the Bronx; the former City of Brooklyn, which is coincident with Kings County; the County of Queens, which is now the Borough of Queens; and the County of Richmond, which is now the Borough of Richmond.¹ In this large territory, covering about 320 square miles, and containing, at the time, a population of three and a quarter millions,² there were three city school systems: that of the former City of New York, that of the former City of Brooklyn, and that of the former City of Long Island City. In addition to these regularly organized city school systems, there were thirty-five school districts in the County of Queens and twenty-nine school districts in the County of Richmond, each under an independent school board or board of trustees. Quite obviously, the variation in the forms of administrative procedure, in the plans of supervisory and inspectorial control, in the programs of study, in the standards of teaching, and in the methods of selecting teachers was as great as the number of school boards. Indeed, the wid-

¹"All the municipal and public corporations and parts of municipal and public corporations, including cities, villages, towns, and school districts, but not including counties within the following territory, to wit: The County of Kings, the County of Richmond, the City of Long Island City, the Towns of Newtown, Flushing, and Jamaica, and that part of the Town of Hempstead, in the County of Queens, which is westerly of a straight line drawn . . . , are hereby annexed to, united, and consolidated with the municipal corporation known as the Mayor, Aldermen, and Commonalty of the City of New York, to be hereafter called 'The City of New York.'"—(The Greater New York Charter, 1897, sec. 1.)

²2,507,414 (1890); 3,437,202 (1900). U. S. Census.

est differences often prevailed between schools within the same city. The chief problem sought to be solved by the Greater New York charter was the administrative organization of these many radically different school units into one harmonious school system.¹

The charter of 1897, which went into effect in February, 1898, provided for four borough school boards for the five boroughs as organized.² Each of these school boards had practically entire control of the schools within its own borough. Each borough had its own superintendent of schools and a staff of assistant (associate) superintendents. There was a board of education for the consolidated city, composed of nineteen representatives from the borough school boards.³ This "central" board of education, as it soon came to be known, had authority chiefly over fiscal affairs and physical matters, the most important of which were, (a) the distribution of the funds provided by the charter for the payment of teachers' salaries; (b) the recommendation of school sites to the city authorities, and the erection of school buildings; (c) the establishment of minimum qualifications—academic and professional—for teachers' licenses. This board also appointed a city superintendent of schools, whose chief powers consisted in (a) nominating to the Board of Education, from a list prepared by the Municipal Civil Service Commission, the four members of the Board of Examiners; (b) reporting upon the condition of the schools of the city, without, however, any real authority to remedy defects; (c) presiding over meetings of the Board of Examiners and voting on the granting of licenses.

¹"The method of administering the schools in the various communities now consolidated into a single city were as various as the schools themselves. In the old City of New York (now the Boroughs of Manhattan and the Bronx) there was a Board of Education, consisting of twenty-one members, vested with powers chiefly legislative, and a Board of Superintendents, consisting of a City Superintendent and fifteen assistant superintendents, charged with the general supervision of the schools and the licensing and nomination of teachers. In addition, the city was divided into thirty-five inspection districts, for each of which the Mayor was authorized to appoint five inspectors, whose duty it was to visit and inspect the schools of their several districts and report the results of their investigations. In the City of Brooklyn, there was a Board of Education, consisting of forty-five members, which possessed not only legislative powers, but, through local committees,—a local committee of three members being appointed for each school,—the power to nominate and appoint all teachers; and a Superintendent of Schools and two associate superintendents, whose duty it was to supervise schools and to license teachers. In what is now the Borough of Queens, in addition to the Board of Education of Long Island City, there were thirty-five school districts, each having an independent school board or board of trustees. In what is now the Borough of Richmond, there were twenty-nine school districts, each under an independent school board or board of trustees."—(First Annual Report of the City Superintendent of Schools, 1899, p. 3.)

²Manhattan and Bronx, twenty-one members; Brooklyn, forty-five members; Queens, nine members; Richmond, nine members.

³The Borough of Manhattan and the Borough of the Bronx constituted a single unit, having eleven representatives (including the chairman) in the central board of education, one borough superintendent of schools, and sixteen associate superintendents. The Borough of Brooklyn had six representatives (including the chairman) in the central board of education, one borough superintendent of schools, and eight associate superintendents. The Borough of Queens and the Borough of Richmond each had one representative (the chairman) on the central board of education, a borough superintendent of schools, and two associate superintendents.

Each borough school board was authorized to appoint teachers, but only on the nomination of the borough board of superintendents, except in Brooklyn, where, by the terms of the charter, the old method of appointment through a local committee for each school was continued.¹

2. The Revised Charter

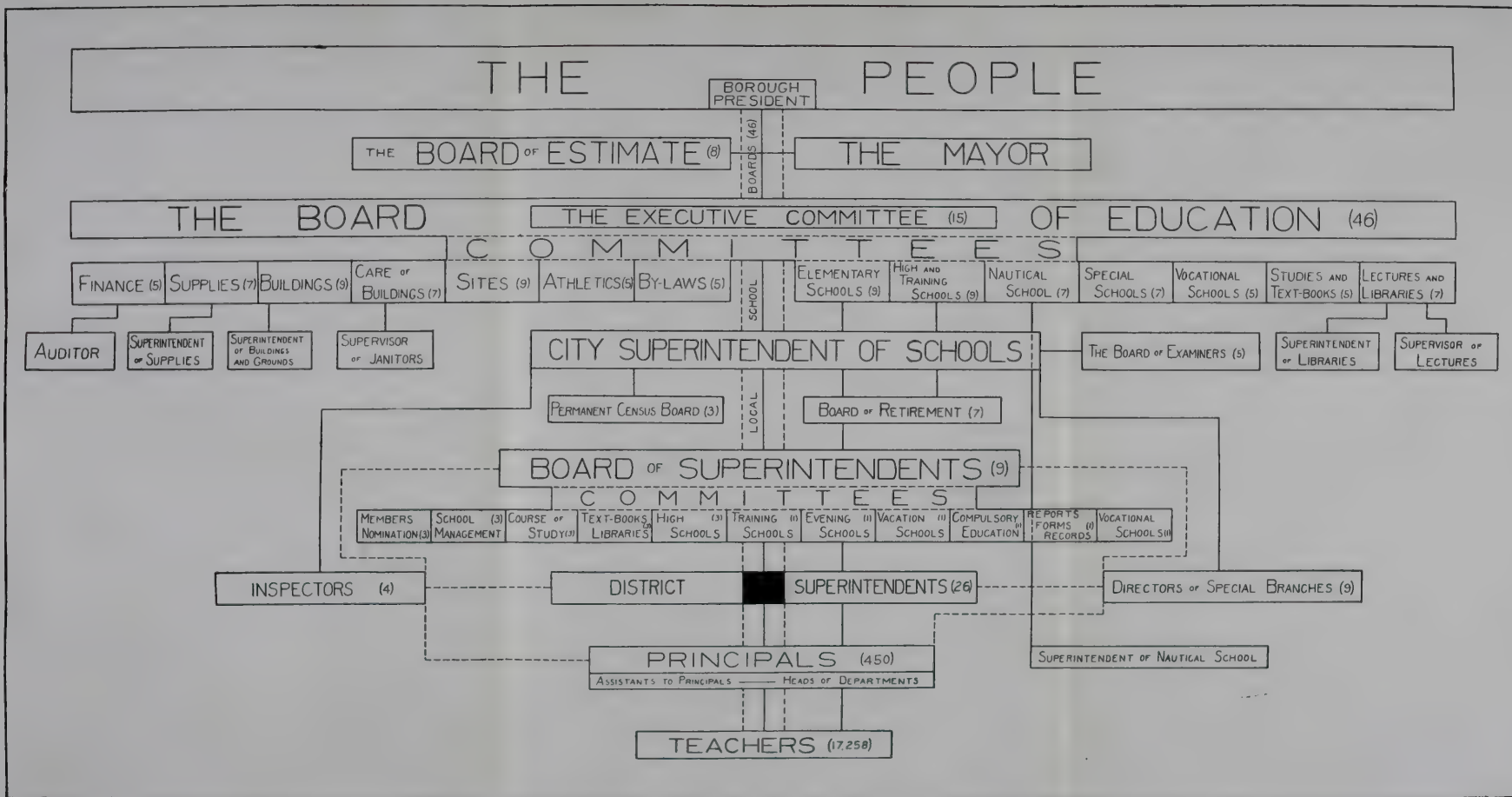
The early experiences under the first charter were sufficient to demonstrate that the possibility of securing, under its provisions, any effective unification or direction of the schools of the city was very remote.² The Revised Charter of 1901, which, as regards the school system, became effective in February, 1902, endeavored to correct the weakness of the former charter by increasing, to a marked degree, the centralized control of the public schools.

The reorganization, under the Revised Charter, abolished the several borough school boards and provided for one board of education for the entire city, consisting of forty-six members, appointed by the Mayor—twenty-two for the Borough of Manhattan, fourteen for the Borough of Brooklyn, four for the Borough of the Bronx, four for the Borough of Queens, and two for the Borough of Richmond. As a safeguard against the unwieldy size of the board of education, provision was made for an executive committee of fifteen, "for the care, government, and management of the public school system of the city." Each borough was to be represented on the committee, to which the board was authorized to depute any of its administrative powers.

By far the most significant feature of this revised plan of school control was the centralized organization of the scheme of supervision. The powers of the City Superintendent of Schools were greatly extended. For the first time in the history of the Greater New York territory, the City Superintendent became the real, responsible, professional head of the school system, and, in many respects, the most important agency in

¹For a discussion of the method of appointing teachers in Brooklyn, see First Annual Report of the City Superintendent of Schools, 1899, pp. 86-88.

²(a) "The system adopted in 1898 was a compromise, and, like many compromises, failed to work satisfactorily. Under it there was difficulty in fixing responsibility; there was more or less duplication of labor; there was a lack of uniformity in educational work; conflicts of authority between the central board and the school boards occurred. Especially was there a lack of harmony between the Brooklyn School Board and the Board of Education, which the Manhattan-Bronx School Board, by virtue of selecting eleven of the nineteen members, practically controlled. The peculiar "Brooklyn idea",—the local committee system,—which differentiated that borough absolutely from the rest of the City in the appointment and promotion of teachers, was a potent cause of friction. The strong demand for unity in educational administration was heeded by the Commission appointed to revise the Charter; and the amended charter passed by the Legislature in 1901 radically changed the administrative machinery and introduced a new system."—(Palmer, *The New York Public School*, pp. 298 to 299.) (b) "The plan of school administration led to constant confusion and misunderstanding, and even litigation between the central authorities and the borough authorities, so that but little progress was made in the schools between 1898 and 1902, when the charter was modified to assume its present form."—(City Superintendent Maxwell, Communication of September 6, 1911.)



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its development. The offices of borough superintendent and associate borough superintendent were abolished. A Board of Superintendents was provided for, consisting of the City Superintendent and eight associate city superintendents. To this board extensive powers were given. The practical initiative in all matters purely educational was committed to it. It was authorized to recommend to the Board of Education grades and kinds of licenses, and the qualifications therefor; to establish, subject to the approval of the Board of Education, rules for the gradation, promotion, and transfer of pupils; to recommend text books, apparatus, and other scholastic supplies; to recommend courses of study; to prescribe regulations relative to methods of teaching, and make syllabuses of topics in the various subjects taught; and to nominate to the Board of Education persons to fill all vacancies in the teaching force. Nominations (except principals of high schools, and principals and teachers of training schools) were required to be made from eligible lists prepared by the Board of Examiners, the Board of Superintendents having liberty to select from the first three names on the list. Teachers were to be appointed, as far as practicable, for districts within the boroughs in which they resided.

All the borough and associate borough superintendents were continued in office, either as associate city superintendents or district superintendents.

3. The General Scheme of Control

The accompanying diagram attempts to represent the relation and interdependence of the several boards, officers, and other instrumentalities that constitute the organized scheme of public school control.

4. The General Principle of the Existing Plan of Control

The City Superintendent of Schools, in his fifth annual report for the year ending July 31, 1903, the first complete year of the operation of the revised charter, set forth the essential principle underlying the revised scheme of educational control.

"During the entire period covered by this report the public school system of the City of New York has been operated under the plan laid down by the revised charter, which became effective, as far as the schools were concerned, on February 3, 1902. By August 1, 1902, when the period covered by this report begins, what properly might be called the period of transition from the old plan of school management to the new centralized method of control had passed. By that time the new Board of Education, of forty-six members, was fully organized, and was discharging, without hesitancy, all the functions of administrative control exercised formerly by a central Board of Education and four borough school boards. The Board of Superintendents, consisting of eight members, appointed as Associate City Superintendents, and the City Superin-

tendent, as chairman, similarly had succeeded to functions distributed formerly among four borough boards of superintendents and the City Superintendent. Some of these functions formerly distributed among the borough, but now vested in a single Board of Superintendents, are as follows: Nomination of teachers, the recommendation of scholastic supplies and text books, the suggestion of courses of study, the direction of school organization and methods of instruction, and, in general, the performance of all duties arising under those sections of the charter which place the initiative in all matters purely educational in the hands of the Board of Superintendents, subject to the approval of the Board of Education. Under the old plan the several boards of borough superintendents had been free to act without uniformity, with the result that there existed in the City of New York four school systems, all differing in aims and in standards.

"By this time, too, the city had been divided into forty-six school districts. To each pair of these districts had been assigned a district superintendent, who, thereby, was made the local supervising officer, and, as such, was held responsible for the schools entrusted to his care. Under the old plan these superintendents, of whom there are twenty-six, had been compelled to devote much of their time, as members of boards of borough superintendents, to preparing suggestions for administrative legislation. Under the new system these men were released from this unnecessary work and made free to give their time to actual supervision in the schools, a most important branch of school administration, which, heretofore, had been too much neglected. Under the plan now in effect the district superintendent is absolutely responsible for the scholastic welfare of each school in his territory. This responsibility makes it necessary that he should be thoroughly familiar with the inner workings of each school. At the same time this plan puts into each neighborhood an officer to whom the citizen can go for the righting of grievances—a fact which brings the administration of the schools into more intimate personal contact with the people.

"The districting of the schools was a necessary preliminary to the appointment by the borough presidents of the forty-six local school boards. These boards consist each of five members, appointed by the borough presidents; one member of the Board of Education, assigned by the president of the Board of Education; and a district superintendent, who, by virtue of his office, becomes the educational adviser of the local boards within his territory. The creation of these local school boards, and the manner in which they have discharged their functions, have brought the administration of the schools very much closer to the people. In the first place, the local school board, which represents the people, has direct representation in the Board of Education through the member of that body who is, *ex officio*, a member of the local school board. In the second place, through the district superintendent, the local board and the people secure the presentation of their views to the Board of Superintendents.

"The system of representation, moreover, works in another direction. The Board of Superintendents has its representative member, the City Superintendent, in the Board of Education, and that body, through him, as well as through its individual members, can express its views to the local school boards, and to the district superintendents.

"A careful study of the workings of the system in the several districts soon convinced me that responsibility among members of the Board of Superintendents must also be determined and definitely fixed. Such a plan, moreover, I felt would give the teachers and the people a more direct representation in the Board of Superintendents than the charter contemplated. To bring about this improvement I introduced a scheme of grouping several school districts into a division, and assigned to the care of each division one of the Associate City Superintendents. This plan, while not prescribed by the charter, is entirely in consonance with its intent, and certainly is in no way prohibited. I found it expedient to constitute seven of these divisions among the elementary schools, and to place the high schools of the entire city in the eighth division. Under this plan the district superintendents and, through them, the schools in their respective districts, are made directly responsible to an Associate City Superintendent, who, in turn, is responsible for the educational welfare of his division of the city. The Division Superintendent, under this plan, is supposed to represent directly in the Board of Superintendents the interests of the schools under his charge.

"There remained three District Superintendents not needed for district work among the elementary schools proper. One of these was assigned to the care of summer schools and playgrounds; the second to the supervision of the evening schools, and the third to the inspection of high schools. The Associate City Superintendents also were appointed to committees, each of which is charged with the development of some important phase of public education. This scheme of supervision throughout the city, as can be readily seen, is one which fixes responsibility, instead of scattering it. Under such a system it becomes a simple matter to lay one's finger on the man responsible when aught goes wrong. When the responsibility has been fixed, the correction of defects is comparatively simple. So definite is this responsibility that some one person is made responsible for the welfare of each child in school, and culpable of neglect if any child of school age is allowed to be out of school. * * *

"Under the new charter the City Superintendent was required to assume many new duties. He was required, for the first time, to take an active part in the actual management of the schools. The inhibition in the charter against his 'interference in the actual conduct of any school' was annulled. He assumed the educational functions that naturally belonged to his office. The full control of the department of truancy was placed in his hands, instead of being divided among several school bodies.

"The Board of Examiners, under the new charter, continued prac-

tically its old duty, with the welcome exception that a single standard of licenses was substituted for the old condition, where each borough had different requirements for the same licenses.

"That this system of cross-representation from the people to the Board of Education, and to the Board of Superintendents, and the City Superintendent, has worked smoothly is established by the fact that there has been no demand for any material change in the charter. Each element of the system has moved harmoniously for the interest of the schools, and has demonstrated its usefulness in the particular field to which the charter assigned it. As far as the schools themselves are concerned, the effect of the revised charter during this period is to be determined most accurately by the year's record of actual accomplishment. A statement of what has been done follows, and on this I am willing to found my assertion that centralized control of education has been of material benefit to the schools."¹

The above statement has been accepted as still embodying the attitude of those responsible for the direction of the affairs of the school system. The production of evidence as to the extent to which this theory of supervisory organization has, after a decade of practice, been successful in establishing those conditions that underlie the effective activity of teachers, and the best welfare of children is the task of this portion of the Inquiry.

5. The General Nature of the Existing Plan of Control

On the administrative, as well as the supervisory side, the present organization is the result of a compromise, rather than of a carefully devised plan to meet specified ends. The consolidation act of 1897, and the Revised Charter of 1901, were obliged to recognize the practices and organization of public schools as they then existed in the several cities and boroughs. The obligations of the different municipalities entering into the Greater City needed to be carried out; the rights of individuals already possessing a status must be protected. A decade and a half of compromise would seem to be sufficient. It is now imperative that compromise give way to some plan established for the single purpose of, directly meeting the educational needs of the children of the city.

It is relevant at this point to indicate one of the principal conclusions of the Inquiry: That, under the existing organization and mode of operation, the schools of the city are under the continued necessity of reacting to a maximum amount of external administrative control, are influenced by a minimum amount of competent expert and constructive supervision, and do not receive the benefits of regular inspection, and of unbiased estimates of the value of their methods and products. The major energies of the supervisory staff, including the City Superintendent, associate superintendents, district superintendents, supervisors, directors,

¹ Fifth Annual Report of the City Superintendent of Schools, pp. 11-15.

as well as principals and assistant principals, are consumed by the general administrative and routine, clerical duties. Altogether too little genuine and progressive leadership influences the work of the teachers, or the accomplishment of pupils. This general situation is, in large measure, due to the previously mentioned failure to distinguish between the essential administrative, supervisory, and inspectorial forms of control. In this connection the mere business of external organization and operation of a system of public schools for a rapidly expanding city of a diverse population of five millions has been, it must be admitted, a disturbing factor of no small influence.

The schools have been maintained under a form of control that is distinctly administrative and mechanical; a form of control that has not kept a single eye on the real substance and worth of teaching and education. The schools have not been kept, however, under the influence of that effective supervision and inspection which gives unity, purpose, and high standard of attainment to the work of teachers. *There is a striking lack of consciousness within the school system of the radical difference between merely keeping the schools in operation, and keeping the schools in operation so as to produce tangible results of high quality. The organization of the school system has been from the top down, rather than from the bottom up; a procedure as obstructive to progress and real growth in education as it is in other human institutions.*

III

THE SCHOOL AS THE UNIT FOR SUPERVISION

1. The Principal as a Supervisor
 2. Supervisory Organization of Elementary Schools
 3. Supervisory Staff of Elementary Schools; Statistical
 4. Supervisory Staff of Elementary Schools; Salaries
 5. Selection of Elementary School Principals: Training; Experience; Age
 6. Powers and Duties of Elementary School Principals
 7. Rated Efficiency of Elementary School Principals
 8. General Summary
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I. The Principal as a Supervisor

Whatever may be the theory by which a school system is organized and operated, the single school must be taken as the working basis for the calculation of the educational worth of organization, methods, and results. The center of gravity of supervisory control, in so far as supervision fulfills its legitimate functions, is the principal. The time worn epigram, "as is the teacher, so is the school," has lost, through the complexities, magnitude, and regimentation of public education in the modern city most of its practical significance and force. "As is the *principal*, so is the school" more nearly represents the truth. Upon the independence, skill, and qualities of leadership of the principal depend primarily the ideals, standards, and achievements of teachers and pupils. In fact, if the already indicated characteristic of effective school supervision be accepted as fundamental—that supervision is dominantly and constantly personal in its methods and objects in order to attain its constructive ends—then, in the office of the principal will be found the measure of the real, as well as the potential, value of the supervisory organization.

As already stated, other parts of the Inquiry have presented certain detailed considerations of the work of principals, and also of the work of assistants to principals and heads of departments. At this point it is germane to indicate certain factors and circumstances of general policy that exert a preponderant influence upon the character and value of the supervisory activities of principals.

2. Supervisory Organization of Elementary Schools

The evident intention of the existing practice is to regard each fully provided and permanent school building as the unit for school organization and supervision. A principal is the responsible head of such a unit. The separate organization, of boys and girls' schools, or of grammar and primary schools, within the same building, which formerly obtained, especially previous to 1897, has, for the most part, been discontinued.¹

The policy of consolidating into one school under one principal, separate school organizations housed in one building has been justified by the City Superintendent of Schools by the following arguments of unquestionable soundness.

"On behalf of the policy of placing all the teachers and their classes assembled in one building under one administrative head, the following claims may justly be made:

"First, there is economy in expenditure for supervisory purposes—a very important matter when, owing to the marvelously rapid growth of the public school system, there is considerable doubt at the beginning of each year whether the annual appropriation will be sufficient.

"Second, there is economy in space; that is, each building may be made to accommodate a larger number of pupils with one organization than with two organizations—a consideration of paramount importance when the necessity for reducing the number of children on part time is concerned. When there is only one school organization in a building it is easier to keep every seat occupied through the consolidation of small classes than when there are two organizations.

"Third, the character of the supervision is, as a rule, improved, because there is a better opportunity to unify and coördinate the work of teachers and pupils. A school reaches its highest efficiency when it is so organized that all teachers coöperate to reach a common purpose, and when the efforts and the experience of all teachers are made to reinforce the efforts and experience of each teacher. Such a result is most easily attained under the influence of one directing mind."²

Under the by-laws now governing the organization of elementary schools the following provisions for the supervision of such schools are made:³

¹ There was a strong tendency during the period under review (1890-1897), and for several years previously, in favor of consolidating schools and departments, where practicable, in the interest of efficiency and economy, and repeated recommendations on this head are to be found in the annual reports of the City Superintendent. The Board adopted many of these. Consolidations were rendered easier by the abolition, in 1897, of the separation between grammar and primary schools. The primary schools (forty-eight in all), which had been numbered by themselves, were thereupon renumbered, to follow in consecutive order the grammar schools, and since that time, all the schools, without reference to the grades taught in them, have been designated simply as public schools."—(Palmer, *The New York Public School*, pp. 192-193.)

² Seventh Annual Report of the City Superintendent of Schools, pp. 41-42.

³ See Appendix A for these By-Laws. For the purpose of indicating the recent tendencies, the By-Laws, as they existed prior to January 1, 1912, are presented in

- a. Less than six classes—Senior teacher. Teaches a class.
- b. Six to seventeen classes; grades *below* 7A—Teacher in charge, i. e., assistant to principal (head of department), or person holding higher license. May be required to teach a class.
- c. Six to seventeen classes; any grades *above* 6B—Head teacher or assistant to principal (head of department), or person holding higher license. Relieved from teaching a class.
- d. Eighteen or more classes—Principal. No teaching.

The by-laws provide for supervisory and clerical assistance as follows:

- a. Twelve or more classes—Additional teacher.
- b. Twelve to twenty-seven classes—One assistant to principal when school has high school department, and elementary school has twelve or more classes.
- c. Twenty-eight or more classes—One assistant to principal.
- d. Forty-eight or more classes—Two assistants to principal.
- e. Fifty-eight or more classes—Two additional teachers.

The following distributions of elementary school organizations, according to the above classification, have been compiled from the official directory of schools, issued February 1, 1912. The data of this table show that the problem of supervision is the supervision of large schools.

	Manhattan	Bronx	Brooklyn	Queens	Richmond
a. Less than six classes.....	1	0	3	16	14
b. Six to seventeen classes, below 7A....	5	2	16	18	4
c. Six to seventeen classes, above 6B....	1	5	5	18	46
d. Eighteen or more classes.....	153	37	144	33	10
a. Less than twelve classes.....	3	5	13	42	20
b. Less than twenty-eight classes.....	25	15	66	68	29
c. Twenty-eight to forty-seven classes...	74	20	76	15	5
d. Forty-eight or more classes.....	57	9	26	2	0
e. Fifty-eight or more classes.....	34	5	6	1	0

In effect, the new by-law, as formulated to correspond with the provisions of the 1912 salary schedules, (a) increases the number of classes necessary for "principal" schools from twelve to eighteen; (b) adds an additional teacher for schools having twelve to forty-eight classes; (c) diminishes from three to two the number of assistants to principal in schools of sixty-seven or more classes.

in addition to those now in force, and adopted to make the adjustment thought necessary on account of the 1912 salary schedule.

3. Supervisory Staff of Elementary Schools: Statistical

Certain distinctive features of the problem of supervision of the elementary schools of the city are exhibited in the following tables (I and II). To select, to organize, and to maintain on a high level of effectiveness and coöperation, a staff of nearly nine hundred supervisors in five hundred schools, are tasks the successful performance of which demands the best of civic and educational ability. The proportion of supervisors in elementary schools—i. e., principals, heads of departments, and assistants not teaching—to regular teachers, as shown by Table II, would seem to be an adequate one; providing that these supervisors are competent, and free to devote themselves chiefly to those matters that should have first claim upon time, energy, and skill.¹

Table I²—Showing the Number of Supervisory Officers in Elementary Schools—Principals, Heads of Departments and Assistants Not Teaching—for Each Year During the Five-year Period, 1907-1911, Inclusive.

	1907 (p. 31)	1908 (p. 35)	1909 (p. 41)	1910 (p. 40)	1911 (p. 36)
Manhattan.....	331	339	356	354	354
Bronx.....	64	71	77	79	84
Brooklyn.....	276	276	302	316	316
Queens.....	61	68	77	80	81
Richmond.....	19	63	22	24	23
Totals.....	751	817	834	853	858

Table II²—Showing the Ratio of the Number of Supervisory Officers to the Number of Regular Teachers in Elementary Schools for Each Year During the Five-year Period, 1907-1911, Inclusive.

	1907 (p. 31)	1908 (p. 35)	1909 (p. 41)	1910 (p. 40)	1911 (p. 36)
Manhattan.....	18.3	18.5	17.6	18.0	18.1
Bronx.....	18.9	18.6	18.1	18.8	18.8
Brooklyn.....	16.6	17.8	17.1	17.1	17.4
Queens.....	17.5	17.2	16.1	16.0	16.3
Richmond.....	17.1	15.7	17.2	15.8	16.7

¹ As a matter of fact, this freedom for supervisory work does not obtain. See Professor McMurry's Report.

² Compiled from the annual reports of the City Superintendent of Schools. The number in parenthesis under each year refers to the page of the report from which the data are taken.

4. Supervisory Staff of Elementary Schools: Salaries

A detailed, critical discussion of the complicated and widely debated question of the compensation of teachers and supervisors in the New York public school system, however fundamentally related to quality of service, is not possible here. The schedules of salaries of those occupying supervisory positions in the elementary schools of the City are presented¹ as the basis for the expression of a general conclusion regarding the financial attractiveness of these positions as compared with the financial attractiveness of supervisory positions outside of the City of New York. It must be clearly understood that in making this comparison there is no implication that the existing salaries for elementary school principalships and related positions in the school system are either too high or too low. This statement, though, seems to have ample foundation; that, speaking generally, New York City is paying for supervisory service according to a standard equal to, and perhaps above, that of other cities. Reliable and comprehensive information as to the existing salary schedules of elementary principals of other cities is not available; even though this information could be obtained, it is doubtful if it could be here employed for comparative purposes. If, however, the salaries of city superintendents of schools of other cities are compared with those of elementary school principals of New York City, it may be concluded that in so far as compensation serves to attract ability, the City of New York should be able to compete to a fair advantage for competent men and women to supervise schools.

The following tables (III and IV) are self-explanatory. The median annual salary of the city superintendents in one hundred and three cities of fifty thousand population and over (census 1910) is between \$3,750 and \$4,000; in ninety-four cities, between twenty thousand and one hundred thousand population, in the North Atlantic States, the median annual salary is between \$2,750 and \$3,000.

Under the old schedules the initial salary of men principals of New York elementary schools was \$2,750, increasing by an annual increment of \$250 until the fourth year of approved service, when the maximum amount, \$3,500, was reached. By the provision of the new schedules, the initial salary is \$2,300, with an annual increment of \$240, until the sixth year of service, when the maximum, \$3,500, is reached.

¹ See Appendix B for the old (prior to January 1, 1912) and the new schedules.

Table III¹—Showing Distribution of Salaries of Superintendents of Schools in Cities of 50,000 Population and Over (Census 1910).

\$2,000—\$ 2,250.....	2
2,251— 2,500.....	6
2,501— 2,750.....	2
2,751— 3,000.....	16
3,001— 3,250.....	0
3,251— 3,500.....	7
3,501— 3,750.....	18
3,751— 4,000.....	15
4,001— 4,250.....	2
4,251— 4,500.....	4
4,501— 4,750.....	0
4,751— 5,000.....	15
5,001— 5,250.....	0
5,251— 5,500.....	1
5,501— 6,000.....	9
6,001— 7,500.....	4
7,501—10,000.....	2
Total.....	103
Median, \$3,750-\$4,000.	

Table IV²—Showing Distribution of Salaries of Superintendents of Schools in Cities of 20,000 to 100,000 Population (North Atlantic States) (Census 1910).

\$1,400—\$1,500.....	1
1,501— 1,750.....	0
1,751— 2,000.....	15
2,001— 2,250.....	4
2,251— 2,500.....	19
2,501— 2,750.....	6
2,751— 3,000.....	18
3,001— 3,250.....	0
3,251— 3,500.....	12
3,501— 3,750.....	5
3,751— 4,000.....	6
4,001— 4,250.....	1
4,251— 4,500.....	3
4,501— 4,750.....	0
4,751— 5,000.....	4
Total.....	94
Median, \$2,750-\$3,000.	

It is fair to assume that the cities included in the foregoing tables maintain, for their chief educational office, standards of personality, education, training and experience at least equal to those in force in New York for elementary school principals.

¹ Compiled from Annual Report of U. S. Commissioner of Education, 1911, pp. 620-643. Five cities, no data.

² Compiled from Annual Report of U. S. Commissioner of Education, 1911, pp. 620-643. Six cities, no data. States included, Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey.

5. Selection of Elementary School Principals: Training; Experience; Age

A thorough study of the existing requirements and methods of selection of principals and assistants to principal could not be attempted. Certain features of the system now in operation are selected for brief consideration.

The following table (V), relating to the education and experience of elementary school principals appointed during 1908-1909, 1909-1910, 1910-1911, and 1911-1912 (February 1), has been prepared from the official records in the City Superintendent's office.

Table V—Relating to the Education and Experience of Elementary School Principals Appointed During 1908-1909, 1909-1910, 1910-1911, and 1911-1912 (Feb. 1)

	Men	Women	Total
NUMBER OF APPOINTMENTS.....	43	41	84
EDUCATION AND TRAINING—			
Entirely within the City.....	27	30	57
Partly " " ".....	10	3	13
Entirely outside " ".....	6	8	14
PREVIOUS EXPERIENCE—			
Entirely within the City.....	32	29	61
Outside of the City.....	11	12	23

The above table reveals the significant fact that approximately three-fourths of those appointed to elementary school principalships during recent years not only have received all of their education and training within the schools of New York, but also have had all of their teaching experience within the school system. Less than 10 per cent. of those appointed have had any profitable experience in schools outside. Admitting that the system of selection of principals now controlled by the Board of Examiners results in the appointment of the most capable of those presenting themselves as candidates, the marked tendency of this system toward inbreeding should not be permitted to continue unheeded. Every school system requires for its progressive development the infusion of new blood—both teachers¹ and supervisors, whose attitudes and

¹"It will be noticed that during the last three or four years the number of persons trained in schools and colleges, other than those of the City of New York, has been diminishing. The diminution is probably due to the fact that teachers' salaries have been generally increased throughout the villages and cities of this state and neighboring states. These increased salaries, though seldom, if ever, equal to those paid in New York, are really quite as large, if not larger, because in smaller places the cost of living is less. Hence of late there has been little financial incentive to seek positions in New York. In view of the increase in the salaries of our women teachers, however, after January 1, 1912, it may be expected that the number of teachers coming from the outside will again increase. This is an effect greatly to be desired, as nothing is more deadening to a school system than continually filling vacancies in the ranks of teachers from those trained in its own schools. The frequent introduction of

standards of value have not become conventionalized, and whose influence, therefore, counteracts the narrowness and provincialism which are *inevitable characteristics of the highly organized life of a great city*.

New York City has become a great center of industrial, commercial, civic, intellectual, and artistic activity; hence, it offers unusual opportunities for persons of ability, ambition and energy. If New York is to maintain a public school system equal to the tremendous task imposed upon it, some way must be found to attract to its educational service men and women of mark from outside. At the same time the stim-

Table VI—Showing the Age of Elementary School Principals at the Time of Appointment: Principals Appointed During 1908-1909, 1909-1910, 1910-1911, 1911-1912 (Feb. 1)¹

Age at Appointment.	Number of Men.	Number of Women.
26	1	0
27	0	0
28	1	0
29	0	0
30	2	0
31	1	0
32	3	1
33	1	0
34	6	2
35	3	1
36	4	1
37	2	1
38	3	3
39	0	0
40	6	3
41	1	1
42	1	1
43	0	2
44	0	4
45	1	4
46	1	4
47	1	2
48	0	2
49	0	2
50	0	0
51	0	0
52	0	2
No Record	5	5
Total,	43	41
Median Age,	36	44

teachers with diverse training and diverse experience is ever necessary to healthy growth and vigorous vitality."—Thirteenth Annual Report of the City Superintendent of Schools, page 161.

¹ The By-Laws of the Board of Education (sec. 66, sub. 2) provide for age limits for licenses as elementary school principals: men, 25 to 45 years of age; women, 25 to 40. *However*, "In the case of applicants who have been ten years in the supervising or teaching force of the public schools of the City of New York, the maximum age for licenses as director of a special branch and as principal of an elementary school shall be, for a man, 55 years, and for a woman, 50 years, and for licenses as assistant to principal (women only), 50 years."

ulus of promotion must operate for the best of those within the school system. A Chinese wall about the public schools may protect them from invaders; but the gates should be open to those who bring new ideals, fresh ideas, new modes of action. Only thus will the schools be safe from the blight of isolation and self-sufficiency.

One other question has presented itself from a consideration of the data presented in Table VI.

The principal's office is one that requires enthusiasm, qualities of leadership, plasticity, training, study. Are these qualities best conserved through a system by which, generally speaking, appointment is postponed until the age of thirty-six, in the case of men, and until forty-four, in the case of women? The issue here raised is a complicated one, one concerning which it is easy to develop controversy. Nevertheless, it is in place to suggest that persons appointed to principalships beyond the age of forty, unless they have had more or less extended opportunity for close contact with the entire range of elementary school work, or unless they are endowed with conspicuous merit, are not likely to render that quality of service which the welfare of teachers and pupils demands. Only the exceptional individual could serve as class teacher or departmental head for a considerable number of years, and develop or retain those characteristics essential to the principalship. Teachers at forty-five may, as is frequently alleged, be rich in altruistic motives and social influence. But those powers and habits of mind that underlie the fruitful supervisory direction of schools are likely to be lacking, unless they have been consciously cultivated.

6. Powers and Duties of Elementary School Principals

The Revised Charter does not, naturally and properly, specify the details of the organization and control of the several classes of schools constituting the public school system. However, it is not without significance that the only duty and responsibility of moment prescribed by the charter for principals emphasizes the supervisory functions of this office.¹

Principals are, under the by-laws of the Board of Education, "the responsible administrative heads of their respective schools." The chief duties and functions of principals, as enumerated by these by-laws, are as follows:

a. To instruct heads of departments and teachers in all matters pertaining to discipline and teaching. (Sec. 43-1.)

¹"Subject to regulations prescribed by the Board of Superintendents, and under the supervision of the district superintendent in charge, the principal of each school shall direct the methods of teaching in all classes under his charge."—Revised Charter, Sec. 1086.

b. To carry out the by-laws, rules, regulations, and resolutions of the Board of Education; and the instructions of the City Superintendent of Schools, and the Board of Superintendents. (Sec. 43-1.)

c. To establish standards of teaching for their schools through the organization of the work of teachers, through inspection and examination of class work, through model lessons in the presence of teachers, and through conferences with teachers. (Sec. 43-2.)

d. To give special attention to newly appointed, substitute, and unsuccessful teachers; and to keep a record of assistance rendered to such teachers. (Sec. 43-3.)

e. To rate teachers according to their efficiency. (Sec. 43-3.)

f. To report upon the work of teachers holding temporary licenses. (Sec. 39-14 d.)

g. To submit reports to the City Superintendent of Schools, and to the District Superintendent. (Sec. 43-4.)

h. To prepare requisitions for text books and apparatus. (Sec. 43-3; sec. 32-11.)

i. To keep records of class inspections and examinations, and to require heads of departments to keep similar records. (Sec. 43-6.)

j. To direct the work of heads of departments. (Sec. 43-7.)

k. To exercise care that no injury is done to school property, and to report injuries and repairs needed. (Sec. 43-8.)

l. To supervise the janitor as to operating and protecting the heating and ventilating apparatus; and to instruct teachers in the regulation of the temperature of class rooms. (Sec. 43-9.)

m. To keep record of absence and lateness of members of the supervising and teaching force. (Sec. 43-11.)

n. To exercise pupils and teachers in rapid dismissal. (Sec. 43-13.)

o. To engage in no other occupations that will interfere with duties; to give no private lessons for pay in any public school. (Sec. 43-14.)

p. To prepare payrolls (Sec. 58-2) accompanied by special report of school sessions. (Sec. 43-16.)

q. To require pupils of all grades, except those of the first two years, to devote one-half hour each day to study in the class room under the direction of the class teachers. (Sec. 43-17.)

r. To report to the District Superintendent inefficient and incompetent teachers. (Sec. 43-18.)

s. To report to the City Superintendent teachers absent without leave of absence properly granted. (Sec. 43-18.)

t. To report to the District Superintendent boys to whom employment certificates have been issued. (Sec. 43-20.)

u. To report weekly to the District Superintendent names of pupils leaving school for the purpose of engaging in any employment. (Sec. 54-5.)

v. To provide the District Superintendent, when the school is visited for examination, with a written statement of facts. (Sec. 41-14.)

- w. To oversee the ratings of pupils. (Sec. 49-4.)
- x. To keep records of pupils. (Sec. 55-16.)

While the literal expression of the by-laws makes the principal "the responsible administrative head" of his school, the spirit of the by-laws places upon him a large supervisory responsibility. He is, under the obligations of the above prescriptions, especially items a, c, d, e, f, i, r, v, and w, the potential supervisory head of his school. In fact, however, he has no real supervisory independence or initiation. Practically all of the constructive features of his work are under the immediate control of the Board of Superintendents, the associate superintendent, or the district superintendent. In the last analysis, the ineffectiveness of the elementary schools of the city may be measured by the extent to which the principals fail to perform, or are prevented from performing, those activities that are the rightful functions of their offices. Professor McMurry has, in his report,¹ pointed out some of the hindrances to the proper performance of the supervisory duties of the elementary school principal. I express entire agreement with the conclusions he has presented, especially with regard to detrimental influence of the number of clerical and administrative duties demanded of the principals, consuming, as these duties do, the major amount of time and energy.

In addition, I would emphasize the importance of the waste that now takes place in elementary schools through the system of appointing so-called additional teachers for clerical service—persons neither trained nor adapted to render efficient and economical service of the sort required; and also the waste that takes place from the number and character of the various monthly, annual, and special statistical reports that must be submitted by principals.²

¹ See Part III of his report.

² It has not been possible to make a careful and detailed examination of all of these reports, with reference to their form and final utility. I have, however, gone over practically all of the statistical reports that are now prepared by elementary and high school principals. On the basis of this, and the information given me by principals, I feel justified in saying that there is not only a large opportunity for the simplification of the statistical reports, but also a necessity of finding out the actual cost of the statistical reporting. Apparently the authorities of the Department of Education have permitted this feature of the work of the schools to grow without special reference to the ends to be served.

The following typical statements, (a) by a principal of an elementary school, and (b) by a principal of a high school, represent fairly the general attitude of principals toward this feature of their work:

(a)

"It would be an excellent thing, as you suggest, to have the clerks selected from a list of persons specially trained and qualified for clerical work instead of from the teacher's list. Such persons should have received special training for the particular work of a clerk, and when in service their work should be inspected by a specialist representing the school authorities. It is most important to secure uniformity in the matter of methods of keeping records and making out reports.

"There should be a central office of statistics; and information desired by building department, supply department, superintendents, or others should be secured from this bureau. The school clerks are kept busy in making out different reports for different

From the evidence gathered during my own personal inspections and visitation of schools, supplemented by the testimony of Professor McMurry, there would seem to be two general classes of elementary school principals: (a) those who are competent to act as supervisors and make a conscious effort to subordinate the routine administrative tasks, and (b) those who are content to confine their activities to the mechanics of school operation and control. Before the elementary schools of the city are individually properly supervised, there must be a considerable increase in the number of the first group, and the chief educational authorities must find a way of placing a premium on supervisory capacity by providing freedom of action to every principal in accordance with his competency. That supervision is best which controls and is controlled least.

authorities, and there is always just enough difference in each request to require the work to be done over.

"All statistics to be called for should be planned in advance, so that records should be made in accordance with that aim, and properly prepared cards or other blanks should be furnished at the beginning of the recording.

"When new records, or reports, or even separate items, are required, there should be unification of the entire system. To-day too many antiquated records are kept.

"Records and reports should be arranged in a proper series, day, week, year, etc., so that each higher report would be a summary of the lower.

"Special statistical investigation of all the schools never should be made without experimenting in several schools, so that complete directions can be supplied to the city and uniformity secured."

(b)

"*Monthly Report to the Superintendent.*—More labor and useless matter than in any monthly report in any other school system in the country.

"*Annual Report to the Superintendent.*—Too complex; too insistent upon data not kept in the school.

"*Report of Teachers Absent Two Weeks or More.*—Practically a worthless report, because no action is taken on it.

"*Application to Visit Schools.*—A fine example of unnecessary complexity and waste of time.

"*Report of School Visits.*—Mostly a matter of form. No instances known of any use being made of the reports. * * *

"*Request for Permission to Invite Address.*—This I gain from principals' meetings is a cause of much useless irritation.

"*Inventory of School Supplies.*—This is required by the charter of the city. It is a maximum of work with a minimum of profit.

"*Record of Telephone Messages Sent.*—This is a waste of time. The telephones cannot be locked up. There is no means of compelling the persons using the telephones to record the messages.

"*Program Reports.*—This is the program of daily recitations copied and sent to the District Superintendent. This means a cost of from ten to sixty dollars' working time of teachers or substitutes for each school. * * *

"*Report to Permanent Census Board.*—The amount of expense connected with this work, for the benefit of the Permanent Census Board, and not appearing in the Budget of expenses because taken from the expense account of the various schools, is several hundred dollars a year for each high school.

"*Records of Regents' Examinations.*—The amount of clerical work, reduplication, fuss and fiddle over these semi-annual wastes requires a personal investigation by some of our experts. * * *

"*Record of Graduation Attainments.*—Required of all the elementary school principals. They submit them to the District Superintendent. I hear the most pronounced complaints as to the uselessness of this work."

7. Rated Efficiency of Elementary School Principals

At the end of each school year the several district superintendents submit to the City Superintendent of Schools ratings of the efficiency of principals, and other persons in charge of independent schools in their respective districts; and also ratings of similar character relative to assistants to principals.¹ In rating principals the following graduated scale is employed: Meritorious—H (highest grade); G; F, non-meritorious; E, inferior; D, deficient. To each principal is given a so-called "general rating." This general rating, expressed by the letters H, G, F, etc., is amplified by a "Detailed Rating." This detailed rating consists of thirteen points, as follows:

- (1) Effect of examinations and inspections.
- (2) Character and effect of conferences with teachers.
- (3) Guidance and assistance of weak teachers.
- (4) Judgment in assigning teachers to classes.
- (5) Discrimination in ratings of teachers.
- (6) Character of record kept (including statistics).
- (7) Interpretation of course of study and selection of text books.
- (8) Grading and promotion of pupils.
- (9) Influence on school discipline, and supervision of truancy.
- (10) Supervision of janitor's work.
- (11) Supervision of recesses, games, athletics, etc.
- (12) Cooperation with other principals using school premises.
- (13) Manners, conversation, conduct.

The reliability and usefulness of the scheme now employed for determining fit and meritorious service of members of the instructional staff is discussed elsewhere.² The intention here is to direct attention to certain features of this rating system bearing upon the quality of service of principals. The following table (VII) exhibits the "General Ratings" of elementary school principals by district superintendents in June, 1911.³

It may be that, during the year 1910-1911 there was but one *inferior* principal in the elementary schools of the city; that *forty* only (8.7 per cent.) of the four hundred sixty-four principals were non-meritorious; that *sixty* per cent. of the principals rendered service of the highest grade; that *ninety-one* per cent. of the principals possessed meritorious competency. If these ratings represent the true supervisory values of the staff of elementary school principals, there are reasons for concluding that *these values have not been fully and wisely capitalized for the*

¹ See Appendix I, p. 453, for the forms upon which these ratings are submitted.

² See Sec. VIII. Methods and Standards for Determining Teaching Efficiency, p. 388.

³ The exhibition of this table is typical. Distribution and study of the general ratings of other years reveal the same degree of variation and the same absence of standards.

Table VII—General Ratings of Elementary School Principals by District Superintendents, June, 1911

DISTRICT SUPERIN- TENDENTS	NUMBER OF PRINCIPALS	RATINGS					NOT RATED	TOTAL	PER CENT. RATED H
		H	G	F	E	D			
A	15	13	2	....	....	....	....	15	86
B	18	8	10	....	....	....	....	18	44
C	23	5	10	8	....	....	....	23	22
D	23	22	1	....	....	....	....	23	95
E	19	7	8	4	....	....	....	19	37
F	20	12	8	....	....	....	....	20	60
G	19	17	2	....	....	....	....	19	90
H	20	16	4	....	....	....	....	20	80
I	37	30	7	....	....	....	....	37	81
J	27	15	11	....	....	....	1	27	56
K	24	2	19	2	....	....	1	24	8
L	38	14	13	11	....	....	....	38	37
M	30	5	19	6	....	....	....	30	17
N	20	11	7	0	1	....	1	20	55
O	14	10	3	....	....	....	1	14	71
P	14	14	....	....	....	....	....	14	100
Q	15	12	1	2	....	....	....	15	80
R	14	7	6	1	....	....	....	14	50
S	13	7	3	3	....	....	....	13	54
T	16	13	3	....	....	....	....	16	81
U	13	7	6	....	....	....	....	13	54
V	16	15	1	....	....	....	....	16	94
W	16	11	2	3	....	....	....	16	69
Totals.....	464	273	146	40	1	....	4	464	..
Per Cent....	..	59.3	31.7	8.7	.2	....	.9	..	..

progressive development of the elementary schools, nor for the greatest benefit of the children attending these schools. A school system that possesses such a very large proportion of superior principals should not lack means for the accomplishment of results of the highest order. Either an inflated value has been given to the performance of principals, or the school organization has been such as to prevent the largest utilization of the capacity of these principals.

The internal evidence of Table VII justifies the doubt as to the real worth of these annual principals' ratings as measures of the quality of service. The wide variations between the different supervisory districts can be accounted for only upon the assumption of a wide variability of standard. The schools of certain districts, according to the data presented in the table, appear to be favored far above the schools of other districts. District Superintendent P., for instance, had in his two districts fourteen principals, all of the highest grade. All but one of the twenty-three principals in the district supervised by District Superintend-

ent D. were regarded as of "H" grade. District Superintendent V. was, likewise, fortunate in having principals of the highest rank. District Superintendents K., M., and C., for example, would be justified in being somewhat envious of their associates, P. D., and V., for they were obliged to carry on their schools with the assistance of eight, seventeen, and twenty-two per cent., respectively, of high grade principals. Further detailed comparisons of this sort are unnecessary.

Testimony from other sources than Table VII—the actual visitation and inspection of schools, and a critical examination of the basis upon which the several district superintendents formulate the ratings of principals—clearly indicates that the work of the principals of elementary schools is not subjected to that cautious, objective examination that should constitute the foundation of the ratings, if the ratings are worth making at all. Vague general impressions should not be, as they undoubtedly are, the chief elements of these ratings.

While recognizing clearly that, in the present state of educational organization and practice, it is extremely difficult to establish definite, concrete standards by which the service of principals may be evaluated, and while recognizing, with equal clearness, that it is impossible to eliminate the influence of the intangible factor of the personal equation, yet one must conclude that the majority of the district superintendents have regarded the important inspectorial function of rating principals as merely a formal procedure. A comparison of the reports of principals' ratings submitted by certain district superintendents during several years shows that the ratings of one year are merely copied from the report of the preceding year.

Appointment to a principalship means permanency of tenure. The temporary license of the principal is practically certain to be made permanent after three years of service.¹ Increase of salary, according to the schedule, is practically automatic. The standards for "fit and meritorious service" are too uncertain and variable to guarantee the selection, retention, and reward of those principals most fit and meritorious, or to prevent the establishment of a low level of service that may be easily reached by those of mediocre ability.

8. General Summary

It appears, from the more important of the foregoing considerations, that:

(a) The number of supervisors (principals, etc.) provided for elementary schools is entirely adequate for effective supervision.

(b) The salary schedules are such as to attract men and women of competence.

¹ See Table XIII, p. 390.

(c) The tendency is to appoint men and women whose education, training, and experience have been too exclusively within the city.

(d) The position of the principal is primarily administrative, rather than supervisory.

(e) The system of rating the efficiency of principals is not such as to distinguish the competent from the incompetent.

IV

THE DISTRICT SUPERINTENDENTS

1. Organization, Powers, and Duties
 2. Size of Supervisory Districts
 3. Selection and Qualifications of District Superintendents
 4. Supervisory Activities of District Superintendents
 5. General Summary
-

1. Organization, Powers, and Duties

By the provisions of the Revised Charter of 1901 (Sec. 1079), the four borough superintendents, by virtue of their office, became associate city superintendents; and four of the associate borough superintendents were designated as associate city superintendents. The remaining associate borough superintendents, twenty-six in number, were given the rank of district superintendents. The term of office was fixed at six years. The charter provided (Sec. 1078) that the City Superintendent should assign the district superintendents, subject to the by-laws of the Board of Education (Sec. 41), "such duties as, in his judgment, will be conducive to the welfare of the public schools of the City of New York." The charter further provided that twenty-three of the district superintendents should be assigned by the City Superintendent to the work of supervision in the local school board districts (forty-six) in such manner that one district superintendent should be assigned to each two of the districts. The assignments were to be made for one year; at the end of which period the City Superintendent had power "to change such assignments as he may deem best for the interests of the school system" The remaining three district superintendents were to be assigned "to such other professional duties as the welfare of the school system may require." During the year 1910-1911 these three district superintendents were assigned as follows: One to vacation schools, playgrounds, and evening recreation centers; one to high schools, and one to evening schools.

The chief powers and duties of district superintendents, as enumerated by the by-laws of the Board of Education, are as follows:

- a. To attend meetings of local school boards, and to make reports to these boards. (Sec. 41-4, 18.)
- b. To keep records of the district. (Sec. 41-3.)
- c. To make recommendations to City Superintendent as to the

proper accommodation for all children of school age in their districts. (Sec. 41-5.)

d. To report on all matters connected with the schools, and in such form as the City Superintendent may require. (Sec. 39-7; Sec. 41-6, 20.)

e. To encourage, advise, and assist pupils, teachers, and principals for the securing and maintenance of a high standard of education. (Sec. 41-8.)

f. To hold conferences of teachers and principals. (Sec. 41-9.)

g. To inspect, examine, and report upon the condition of schools, and the work of pupils, teachers, and principals. (Sec. 41-10, 11, 12, 13, 14, 15, 16, 17.)

h. To rate principals and teachers at least once each year. (Sec. 39-14.)

i. To suspend teachers for gross misconduct, or insubordination, neglect of duty, or general inefficiency. (Sec. 41-19.)

j. To enforce the compulsory education law, under the direction of the City Superintendent of Schools. (Sec. 41-25.)

k. To assign teachers of special branches in the schools of their districts. (Sec. 41-22.)

l. To approve, disapprove, or modify requisitions of principals for supplies. (Sec. 43-5; Sec. 32-11.) (High schools, Sec. 52-17, 20.)

m. To investigate complaints. (Sec. 41-13.)

The district superintendency, according to the general theory of the plan of organization,¹ was to be, as it properly should be, a position of great supervisory importance. These officers were to constitute the direct connecting links between City Superintendent and the Board of Superintendents, and the principals, teachers, pupils, and people of the community. Through them was to come a unification and elevation of educational standards. The evidence which has been collected and considered during the Inquiry has led to the general conclusion that, in practice, the soundness of the theory for the city as a whole has not been fully demonstrated. The more important of the bases for this conclusion will be briefly presented.

¹"The districting of the schools was a necessary preliminary to the appointment by the borough presidents of the forty-six local school boards. These boards consist each of five members, appointed by the borough presidents; one member of the Board of Education, assigned by the President of the Board of Education; and a District Superintendent, who by virtue of his office becomes the educational adviser of the local boards within his territory. The creation of these local school boards, and the manner in which they have discharged their functions, have brought the administration of the schools very much closer to the people. In the first place, the local school board, which represents the people, has direct representation in the Board of Education through the member of that body who is, *ex officio*, a member of the local school board. In the second place, through the District Superintendent, the local board and the people secure the presentation of their views to the Board of Superintendents." (Fifth Annual Report of the City Superintendent of Schools, pp. 12-13.)

2. Size of Supervisory Districts

At no point in the charter is the spirit of compromise more evident than in the provisions relating to the number and powers of the district superintendents. All of those occupying superintendents' positions under the former charter were continued in office, either as associate or district superintendents. The number of district superintendents (twenty-six) was one of the accidents of the compromise. The vested status of individuals, rather than the obvious supervisory needs of the schools, appears to have received the first attention of the charter makers. There is no hint in any of the official reports of the school system that the number of district superintendents provided for in 1902 was in excess of the need. On the contrary, the duties and responsibilities with which they were charged were regarded as near the maximum assignment. These duties and responsibilities have greatly increased during the past ten years. At the same time, the rapid growth of the school system has multiplied the administrative and supervisory problems of the schools. The following table shows the number of school organizations, the number of class rooms, and the register of pupils on September 30, 1911, for each of the supervisory districts.

A detailed examination of Table VIII gives weight to the argument that it is futile to expect a district superintendent to be "absolutely responsible for the scholastic welfare of each school in his territory," when that territory includes five hundred or more class rooms, and twenty-five thousand or more pupils; as is the case in twenty out of twenty-three of the supervisory districts. Granting a moderate supervisory skill on the part of principals, assistants to principals, and heads of departments—and more than this cannot be granted—and assuming a high degree of supervisory power on the part of the district superintendents, and their freedom to give all of their time to the "actual supervision of schools," the responsibility placed upon them is beyond complete and satisfactory fulfillment.¹ When one recalls the constant shifting of teachers and pupils, the situation appears even more difficult. A reasonable way out would seem to be to transfer to the principal many of the items of administration and supervision now belonging exclusively to the district superintendent or divided between the principal and the superintendent. This proposal assumes, however, the competency and reliability of the principal. In any event, the need is not so much more supervision of teachers and schools by district superintendents, but better supervision by principals.

¹ Nevertheless, at a conference of district superintendents, held at the request of the Committee on School Inquiry on April 9, 1912, not one of the twenty superintendents assented to the proposition that the supervisory districts were too large.

Table VIII—Showing Data for the Several Supervisory Districts (Elementary Schools)

Divisions	Division Supts.	District Supts.	Districts	Number of School Organizations	Number of Classrooms	Register Sept. 30, 1911
I.	Strauben-müller	Richman	2-3	14	581	22,195
		Jenkins	4-5	14	632	27,236
		Davis	6-7	15	737	31,533
		Wade	1-9	21	638	24,682
		Total.	8	64	2,588	105,646
II.	Shallow	Granger	8-12	14	553	21,264
		Franklin	13-15	16	562	22,013
		Jameson	16-17	16	724	32,974
		Total.	6	46	1,839	76,251
III.	O'Brien	O'Shea	10-11	13	403	15,176
		Schauffler	14-18	13	450	17,469
		Total.	4	26	853	32,645
IV.	Edson	Elgas	19-22	17	647	28,174
		Lee	20-21	14	638	27,581
		Dwyer	23-24	19	849	37,168
		Taylor	25-26	27	872	38,625
		Total.	8	77	3,006	131,548
V.	Meleney	Griffen	27-29	24	761	30,804
		McCabe	31-34	20	697	29,574
		Strachan	33-35	20	787	33,290
		Veit	32-36	19	735	31,571
		Total.	8	83	2,980	124,239
VI.	Walsh	Campbell	28-30	19	575	25,541
		Edsall	37-38	37	1,003	43,746
		Lyon	39-40	28	1,120	51,762
		Total.	6	84	2,698	121,049
VII.	Haaren	Stewart	41-42	33	633	24,444
		Shimer	43-44	53	749	28,277
		Ettinger	45-46	34	389	13,744
		Total.	6	120	1,771	66,465
Grand Totals.			46	500	15,735	658,843

3. Selection and Qualifications of District Superintendents

The staff of district superintendents is noticeably inert. This condition is due, in part, to the character of the staff itself, and, in part, to the circumstances of the hierarchic organization of the system of school control.

More than half of the district superintendents (during 1911) belong to the group automatically given supervisory status under the terms of the Revised Charter. It is freely admitted by those who have had long experience in the schools now comprising the New York public school system that under the old borough organizations professional qualifications and competency were not always the sole tests for the selection of superintendents. And while a slow process of selection and survival has eliminated most of those who succeeded to the district superintendency by the right of inheritance alone, the existing standard followed is too low.

As far as can be ascertained from the official records, all of the district superintendents, except two or three, are products of New York education, New York training, and New York experience. If inbreeding is detrimental to the teaching force, as is admitted by the City Superintendent in his Thirteenth Annual Report (p. 161); if the inbreeding process influencing the selection of principals produces a neutral and non-progressive character in the supervision of elementary schools, as has been contended in this section of the report; then the inbreeding as it reaches the district superintendency is not a negligible factor of weakness. The opinion has been freely expressed by principals, district, and associate superintendents that it is impossible to secure through the Board of Education the selection of district superintendents from without the school system; that to those promoted from within the system, other standards than those of fitness and of competency are applied in approving the nominations of the Board of Superintendents. This is not to say that encouragement and opportunity for the promotion of those of power and performance within the school system should not be given in the fullest measure. At the same time, any plan for the selection of those who are to be the constructive leaders in the public schools that is founded upon the policy of New York schools for New York people exclusively places an arbitrary and an unfortunate limitation to educational progress.

The Board of Superintendents itself does not appear to have any well-established standards of qualifications for nomination of district superintendents, other than the formal standards of education and experience prescribed in the charter and the by-laws. In other words, if the recently erected standard of "superior merit" is valid in its application to high and training school teachers, it is even more valid with reference to the staff of district superintendents as a condition for appointment and retention. Parenthetically, it might be suggested that, not only new

blood and better blood, but also some proportion of younger blood should be considered among the factors that make for movement and progress.

Of more importance than any of the foregoing considerations is that of the freedom, initiative, and responsibility of the district superintendents. As supervisory officers, the district superintendents are, by specification and implication of charter and by-laws, deputies of the City Superintendent of Schools. Their position is, however, an anomalous one. Responsible to a high degree for the general administration and effective supervision of the schools within their districts, they have, as a body, but slight influence upon the determination of those general policies that finally fix the quality and quantity of educational performance.¹ As at present constituted, the office of district superintendent cannot be an altogether satisfactory position for the energetic, progressive, and constructive individual, whose primary interests are in education and its adaptation to the needs of children.

4. Supervisory Activities of District Superintendents²

Each district superintendent is required to submit monthly a written report of his work.³ An examination of a considerable number of these reports submitted recently indicates that they are made out in a most formal manner, and, consequently, they could not be utilized as exhibiting the kind and amount of the supervisory performances of the district superintendents.

On September 26, 1911, we submitted the following questions to each of the district superintendents:

1. a. What studies or reports have you been asked, officially, to submit to the Board of Superintendents or to the Board of Education, during the last five years, on the scope and method of your work as a district superintendent?
- b. What studies or reports of this kind have you made voluntarily?
2. a. What use was made of such required or voluntary studies or reports?
- b. Are any such studies or reports on file?

¹ An examination of the prescribed duties of district superintendents, as well as a study of the procedure under which their activities are carried on, justifies this statement. The relation of the district superintendent to the Board of Superintendents is that of a suppliant rather than that of an adviser. A review of the meetings of the Board of Superintendents for several years past, and attendance upon several meetings of this Board during the course of the Inquiry, have offered abundant evidence upon this point.

² See Section VIII, p. 388, of this report for certain observations of the work of district superintendents in passing upon the merit of teachers for renewal of license and approval of service under salary schedules.

³ See Appendix C, p. 409, for the form of this report.

3. a. How often in a term, or in a year, do you assemble your subordinates, collectively or in groups, for conferences on the educational problems involved in their work, as well as on routine details?
b. Are any programs of such conferences on file?
4. a. What phase of your work consumes most of your time—constructive educational activities, including supervision, or administrative routine?
b. About what proportion of your time is devoted to the latter?
c. What proportion, if any, of routine details could be delegated to subordinates?
5. a. Do your subordinates study the significance of the reports which they make to their superiors?
b. Are these reports satisfactory as to accuracy and completeness?
6. What means do you employ to influence public educational opinion in your community?

The written replies submitted by twenty-one of the district superintendents are illuminating, not only as to the activities of these officers, but also as to the conceptions held concerning the functions of their office.

Of the replies to question 1, not more than four indicated an understanding of what was meant by "the scope and method of your work as a district superintendent." With the exceptions noted, the replies concerned themselves with a mere mention or an enumeration and description of regular routine and statistical reports. On the basis of this testimony it must be concluded that neither the Board of Superintendents nor the Board of Education has required or stimulated the district superintendents to appraise and criticize the range, the methods, and the results of their own work. A very few (5) of the superintendents had prepared and submitted, on their own initiative, reports and recommendations affecting in any fundamental way their supervisory activities.

The replies to question 2a reflected only a very small degree of effective coöperation between the district superintendents and the City Superintendent, or the Board of Superintendents. Frequently it was noted that the reports or recommendations were "considered" by the City Superintendent or the Board of Superintendents. In a few instances reports had been utilized and recommendations adopted. More frequently, however, the comment was made that it was not known what became of the reports and recommendations.

Question 3 was submitted for the purpose of discovering the extent and the character of the endeavor of district superintendents to create a positive attitude on the part of teachers and principals toward the problems of modern education. The general practice seems to be that meetings of principals are held approximately once each month; in some districts oftener. In a few instances only are the whole number of teachers

gathered together—once or twice each year. Frequent meetings of special groups of teachers are held for special purposes. The striking feature of the exhibit produced by these answers is the absence of any carefully projected and consecutive programs of action. Practically all of the meetings—of principals as well as of teachers—are given over to the publication of administrative announcements, or the presentation of matters of local or transitory importance. The conception of utilizing these meetings as a means for the exercise of educational leadership does not seem to have developed.

The replies to question 4 emphasize the fact that a very few of the district superintendents are able to make any very clear distinction between administrative routine and supervision. While the great majority of replies state that the most of the time goes to constructive and supervisory activities, it is to be noted that several of the district superintendents, who are generally recognized as belonging to the group of the most competent, say frankly that their major energies are consumed by clerical labor and office routine. It was generally admitted that the present method of administering the compulsory education law involved the expenditure of too much time and energy. The estimates of the amount of time consumed by the non-supervisory duties vary from ten to seventy-five per cent. of the time. One-half of the superintendents fix the limit at one-third. If the staff of district superintendents, as a whole, is inert educationally, this may be explained in large part by the fact that the established policy of administrative and supervisory control of the school system that does not recognize that performance feeds upon responsibility. The recommendation accompanying this report, as to the creation of a so-called "Supervisory Council," would open new avenues of usefulness and service for the district superintendents.

5. General Summary

It appears, from the more important of the foregoing considerations of the supervisory position and function of the district superintendent, that:

(a) While the general theory of the plan of the district superintendent in the supervisory organization is a sound one, this theory is not, as to its essential elements, carried out in practice.

(b) The supervisory districts are too large to permit the district superintendents properly to fulfill their responsibilities as supervisors. Many of these should be transferred to the principals of schools.

(c) The existing method of selecting district superintendents too narrowly confines choice to those whose education, training and experience has been entirely within the city.

(d) The absence of a definite and high standard of qualification for selection and retention of district superintendents has limited the supervisory usefulness of these officers.

(e) The relation between the Board of Superintendents and the district superintendents is such as to restrict unnecessarily the freedom, initiative and responsibility of the latter with respect to matters of fundamental educational importance. Provision should be made for the larger participation of the district superintendents in the making of educational policies.

DIRECTORS AND ASSISTANT DIRECTORS OF SPECIAL BRANCHES¹

1. Position in the Supervisory Organization
 2. Number and Increase
 3. The Special Branches: General Social and Educational Policy
 4. Special Teachers
 5. Supervision of the Kindergartens
 6. General Summary
-

1. Position in the Supervisory Organization

The charter (Sec. 1079) authorizes the Board of Education, upon the nomination of the Board of Superintendents, to appoint such directors of special branches as it deems necessary. It is also provided that such directors shall be under the supervision and direction of the City Superintendent; and (Sec. 1085) that they shall act as advisers to the Board of Superintendents, to district superintendents, and to principals with regard to the special branches they supervise; and, further (Sec. 1085) that they shall examine the work in their several branches, report upon the same, and instruct special teachers and class teachers in the teaching of their several subjects. The Board of Superintendents, with the advice of the directors of the respective special branches, assigns to the several school districts such teachers of drawing, music, physical culture, manual training, cooking, sewing, and other special branches. The special teachers are assigned by the district superintendents to their duties in the schools.

The by-laws of the Board of Education emphasize the supervisory functions of directors, assistant directors, and teachers of special branches:

3. "Directors of special branches shall act as advisers to the Board of Superintendents, to the district superintendents, and to the principals, with regard to all matters relating to the special branches they supervise. Under the direction of the City Superintendent, and subject to his assignment, directors and assistant directors of special branches shall examine the work in their several branches, report upon the same, and instruct special teachers and class teachers in the teaching of their several branches." (As amended December 23, 1903.)

6. "Subject to the general supervision of the district superintendents, and to the immediate supervision of their respective directors, the teachers of special branches shall visit the classes in the schools to which

¹ While not, strictly speaking, a special branch, the kindergarten is included here. From the standpoint of supervisory policy, the kindergarten has been regarded as similar to the special branches.

they are assigned, shall inspect their work, give model lessons, and, in coöperation with the principals, shall direct the methods of instruction employed therein."

7. "It shall be the duty of all directors and assistant directors of special branches to report to the City Superintendents twice in each year upon the general efficiency of each of the special teachers under their supervision, or oftener, if required." (As amended December 23, 1903.)¹

The teachers of special branches are employed to aid the regular class teachers, except in the matter of foreign languages, cooking, and shop work; in these branches they teach the pupils directly. Naturally, the kindergartens belong to this same general group.

2. Number and Increase

The following tables summarize the data for the past ten years relative to the number and kind of directors, assistant directors, and teachers of special branches.

Table IX—Showing Number of Directors and Assistant Directors of Special Branches for the Ten Years, 1902-1912²

	1902 1903	1903 1904	1904 1905	1905 1906	1906 1907	1907 1908	1908 1909	1909 1910	1910 1911	1911 1912
MUSIC:										
Directors.....		3	2	2	2	2	2	1	1	1
Assistant Directors.....		...	...	...	...	...	...	...	1	1
DRAWING:										
Director (H. Schools)....		...	...	...	...	...	...	1	1	1
Director (Ele. Schools) ..		...	...	...	...	...	...	1	1	1
MANUAL TRAINING AND										
DRAWING:										
Directors.....		3	3	3	3	3	3	...	...	...
Assistant Directors.....		...	...	...	...	...	...	...	...	1
SHOPWORK (Ele. Sch.):										
Directors.....		...	...	...	...	...	...	1	1	1
PHYSICAL TRAINING:										
Director.....		1	1	1	1	1	1	1	1	1
Assistant Director.....		2	2	3	3	3	3	3	3	3
SEWING:										
Directors.....		2	2	2	2	2	2	2	2	2
COOKING:										
Director.....		1	1	1	1	1	1	1	1	1
KINDERGARTEN:										
Director.....		3	3	2	2	2	2	2	1	1
Assistant Directors.....		...	...	...	...	...	...	...	...	2
Total.....	16	15	14	14	14	14	14	13	13	16

¹ By-Laws of the Board of Education, Section 42.

² The change in the number of directors and assistant directors has been due, for the most part, to the policy of centralizing and unifying the supervision of each of the special branches through a single director, with assistant directors, instead of directors for the different boroughs. The several classes of inspectors have not been included.

Table X—Showing Number of Teachers of Special Branches (Including Kindergartens) for the Years, 1902-1911

	1902 1903	1903 1904	1904 1905	1905 1906	1906 1907	1907 1908	1908 1909	1909 1910	1910 1911
Music.....	....	49	50	49	51	50	51	53	53
Manual Training and Drawing.....	....	51	51	51	51	51	....	....	....
Drawing.....	....	....	....	....	....	....	53	49	48
Physical Training.....	....	21	21	22	30	28	31	33	32
Sewing.....	....	55	55	61	59	62	62	62	60
Cooking.....	....	36	46	48	80	95	115	132	135
Shopwork.....	....	37	41	44	59	71	68	81	100
German.....	....	59	57	60	58	55	50	48	45
French.....	....	10	10	8	7	6	6	6	6
Penmanship.....	....	1	1	1	1	1	1	....	....
Total.....	305	319	332	344	396	419	437	464	479
Per cent. Increase.....	4.09	4.59	3.91	3.61	15.12	5.81	4.3	6.18	3.23
Kindergartens.....	299	419	460	532	570	660	743	786	823
Per cent. Increase.....	32.30	40.14	9.78	15.65	7.14	15.79	12.58	5.79	4.71
Total Average Attend- ance (thousands)....	440	467	487	506	523	545	575	587	603
Per cent. Increase Over Previous Year.....	4.6	6.1	4.38	3.86	3.41	4.21	5.42	2.09	2.86

3. The Special Branches: General Social and Educational Policy

By their nature the effective development of the special branches presents not only numerous special problems of instruction and supervision, but, in addition, certain complex issues of general social and educational policy. Notwithstanding the years of their testing, the special branches have not yet succeeded in attaining a recognized and guaranteed place in the program of studies of public schools. Their introduction has come only after an energetic and insistent campaign by those who have been convinced of their essential worth in popular education. Their further extension, after introduction and recognition, has been dependent upon various fortuitous circumstances, such as varying available financial resources, and the extent to which public interest has been aroused. Even with these things in mind the fundamental fact must not be overlooked that the successful incorporation of the special branches into the program of studies of elementary schools especially will take place only as the branches are in the hands of teachers and supervisors of training, skill, merit, and balance.

The conspicuous problem of the special branches in New York City, as well as the country over, is to be found in the dearth of qualified and competent teachers. Until such teachers are the rule, rather than the

exception, the road of progress of the special branch in the school, and outside of the school, is certain to be filled with obstacles.

There are ample grounds for the judgment that, under existing conditions, the number of directors and assistant directors, excepting in the case of the kindergartens, is sufficient to meet the demands for effective direction and supervision. (A reduction in the number of special teachers as indicated in the next section would make necessary a certain additional number of assistant directors.) No attempt has been made to pass upon their supervisory methods and results.¹

4. Special Teachers

As a matter of large importance in the general educational policy of the city it is pertinent to inquire into the justification for special teachers; that is, those who teach these branches directly to the pupils and who, therefore, must be considered as belonging to the teaching, rather than the supervisory, staff. With respect to certain subjects more or less technical in character, and demanding a degree of special skill—as, for instance, sewing, cooking, and shop work—there can be no argument; regular class teachers cannot be expected to give effective instruction in these subjects.

A question of different character arises with reference to music, drawing, and physical training. Competency in these subjects is a requirement for License No. 1, and has been for a considerable number of years. These subjects constitute an important part in the course of instruction in the training schools. Is it not reasonable to suppose that these subjects should be taught effectively by the regular teachers? The presentment of the City Superintendent of Schools, in his Twelfth Annual Report (pp. 132-133), undoubtedly represents the situation:

Curtailment of the Force of Special Teachers Made Necessary

“Owing to the fact that the Board of Estimate and Apportionment has cut down the Board of Education’s estimate for the payment of special teachers during the year 1911 to a sum very much less than is required to pay the existing corps of special teachers at present rates of salary, it will be necessary to save about \$150,000 during the year 1911. This may be done either by reducing the salaries of the teachers at present in the service, or by abolishing a certain number of positions. If the latter plan is adopted, the question will arise whether, in view of the fact that the teaching of German and French is not pursued in the elementary schools for a sufficient length of time to give the pupils a mastery of

¹ These methods as they are influenced by their general relation to principals and district superintendents were the subject of careful discussion at a special conference of directors and assistant directors held on April 16, 1912, at our request. It was clearly developed that the principal difficulties arise from the absence of a clear definition of the responsibility of the directors for their particular subjects.

these tongues, the teaching should not be eliminated altogether. Even if this action were taken, however, it would still be necessary to economize to the extent of \$75,000 in the matter of teachers for the other branches. A special committee of your board has this very important subject under consideration at the present writing. I am strongly of the opinion that, whatever else is done, the work in shop work for boys, and cooking for girls, should not be curtailed. These are subjects which must be taught, if taught at all, by specialists. The economic and ethical value of teaching every girl to cook, and of giving every boy the use of his hands by the manipulation of the carpenter's tools, cannot be overestimated. In the other branches in which the work of the special teachers is largely supervisory, possibly some curtailment may be made, though it is greatly to be regretted that the necessity is forced upon us. It must be said, however, that the class teachers are now in a better position to do the work with reduced assistance than they were ten, or even five, years ago. A large proportion have been trained, and are able to accomplish results, though certainly not the best results, without assistance.

"The fact is, on the other hand, that, though we are better prepared than we were for this service, the majority of class teachers are not yet fully equal to the demand that will presently be made upon them. Had it been deferred five years longer, it is probable that the special teachers of singing, sewing, physical training, and drawing might have been dispensed with without serious injury to the schools. Your board has protested vigorously against any reduction in any of these activities. For whatever evil results may follow, therefore, the Board of Estimate and Apportionment must be held directly responsible."

Our conclusion is that steps should be taken at once to render unnecessary the majority of the special teachers in music, drawing, and physical training, and to facilitate and hasten the effective qualification of regular class teachers. Those teachers who are qualified should receive an appropriate salary bonus. As long as the teaching of these subjects is chiefly in the hands of a special group of teachers, not only will the public continue to have reservations as to the rightful place of such subjects in elementary education, but the regular teachers themselves will not be ready to assume responsibility for this special instruction, nor will principals consider it as among the objects of necessary attention.

5. Supervision of the Kindergartens

During the year 1910-1911 there were 823 kindergarten teachers. For the special supervision of these teachers there were two directors, one for Manhattan, the Bronx, and Richmond, and one for Brooklyn and Queens. As far as constructive supervision is concerned the great majority of the elementary school principals practically disregard the

kindergarten. In consequence, the supervisory influence over the work of the 823 kindergartners is exerted by the one director and two assistant directors.¹ Assuming an equal division of responsibility, this means one supervisor to 275 teachers. It further means that there is but slight possible relation between the "direction" and the "supervision" of the kindergarten. The remedy for this situation may be either a reasonable increase in the number of assistant directors, or, what is of more importance, a far greater emphasis upon a knowledge of kindergarten ideals and technic than now obtains for those who become eligible for appointment to elementary school principalships. Ultimately, the educational influence upon the later social and educational progress of the child. This is a desideratum for the maintenance of the kindergarten as a part of the public school system. If the kindergartens of the city are to be adopted as an essential part of a balanced and coherent scheme of elementary education, their intelligent supervision must be regarded as belonging to the proper province of the principal, acting as a supervisor.

6. General Summary

It appears, from the more important of the foregoing considerations, that:

(a) Under existing conditions the number of directors and assistant directors, excepting for the kindergarten, is sufficient to secure proper supervision of the special subjects. The relation of the director to the principal and the district superintendent is in need of clearer definition, and his responsibility for the scope and method of his subject should be recognized.

(b) Special teachers in certain of the special subjects should be made unnecessary by requiring competency on the part of regular teachers.

(c) More adequate provisions should be made for the supervision of the kindergarten by the appointment of additional assistant directors, and by making elementary school principals responsible for the supervision of the kindergartens to the same degree as they are for the other classes.

¹ For 1911-12.

VI

THE CITY SUPERINTENDENT, THE BOARD OF SUPERINTENDENTS, AND THE ASSOCIATE SUPERINTENDENTS

1. Current Criticism
 2. The City Superintendent and His Powers
 3. The Board of Superintendents: Organization and Powers
 4. The Bureaucracy of the Board of Superintendents
 5. The Associate Superintendent as a Supervisor of Schools
 6. General Summary
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1. Current Criticism

By far the most insistent and frequently expressed criticisms of existing educational conditions in the city are directed against the City Superintendent of Schools and the two bodies of which he is the principal member—the Board of Examiners and the Board of Superintendents, more particularly the latter. These criticisms have been developed from many quarters, within and without the school organization, from disinterested as well as interested individuals. In this, as well as other aspects of the Inquiry concerning which there has been exhibited strong personal differences and considerable public controversy, our endeavor has been to discuss the issues raised impersonally, and exclusively from the standpoint of the ultimate effectiveness of the city's school system.

It is pertinent to indicate here one very significant aspect of the whole general problem of supervisory control. Obviously, much the most useful information and evidence relating to the methods and effectiveness of the work of supervisory officers of a complex school system are derivable only from judicially tempered individuals within the system itself. We have been brought into contact with many such persons who, as teachers, or principals, or superintendents, were willing to bring forward unbiased and substantiated testimony bearing directly upon the objects of the investigation. However, except in the case of a few negligible and minor matters, they were expressly unwilling to permit themselves to appear as witnesses of record. The explanation for this disinclination invariably given was that the expression of critical judgments militated seriously against their professional standing and advancement. This attitude of those within the schools, indefensible though it appears to be,

has been so marked as to warrant this special mention. For the circumstance reflects a condition of affairs wholly detrimental to the progressive development of the best interests of the schools.

Those primarily responsible for the school organization and its operation appear, intentionally or unintentionally, to have discouraged competent criticism and to have permitted incompetent criticism to undermine an intelligent public confidence. This must be regarded as unfortunate from every point of view. The capacity of a school system to produce results is determined, in the first instance, by its readiness to adapt itself to new problems and demands and by the completeness with which it undergoes this adaption. In other words, this capacity is to be measured by the growth of the school system from the inside. The rate and quality of this growth are conditioned by the character of the scrutiny to which the workers within the system are encouraged and expected to submit the methods and aims, not only of their own activities, but those of their co-workers. The assumption by those in authority of attitudes other than of such encouragement and expectation means the maintenance of system for the sake of system, and not as a means to effective education of children.¹

2. The City Superintendent and His Powers

The City Superintendent of Schools is elected by the Board of Education for a term of six years; he may be removed, for cause, at any time by a vote of three-fourths of all the members of the board; and he may be suspended by the board pending trial of charges. (Charter, sec. 1067.)

By the provisions of the revised charter, and of the general school laws of the state, the office of the City Superintendent is the key to supervisory organization and operation of the educational system of the city. It is intended to be the connecting central link by which the various offices, institutions, and activities are brought into a working relationship. The principal powers and duties of this officer, as prescribed by the charter and by the by-laws, are as follows:

(a) He has a seat in the Board of Education, and the right to speak on all matters before the board, but not to vote. (Charter, sec. 1077.)

(b) He has the right of visitation and inquiry in all the schools of the city. (Charter, sec. 1077.)

(c) He reports to the Board of Education on the educational system of the city, and upon the condition of any and all the schools thereof (Charter, sec. 1077); he submits an annual report (Charter, sec. 1078).

¹ In passing this judgment, there has been kept fully in mind the destructive and negative influence of much of what passes as "disinterested criticism," which too frequently is but the expression of a narrow, querulous, and selfish discontent. In a great cosmopolitan population a certain amount of this is inevitable, inside and outside of the schools.

(d) He is chairman, *ex officio*, of the Board of Superintendents. (Charter, sec. 1079.)

(e) He assigns, subject to the by-laws of the Board of Education, the duties of the associate and district superintendents of schools. (Charter, sec. 1078.)

(f) He assigns twenty-three district superintendents, each to two districts, for one year; reassigns as he deems best for the interests of the school system; assigns three district superintendents to special duties—one to high schools, one to evening schools, and one to vacation schools, playgrounds, and recreation centers. (Charter, sec. 1078.)

(g) He assigns to duty, and supervises and directs the work of directors and assistant directors of special branches. (By-laws, sec. 42.)

(h) He holds conferences of associate and district superintendents. (Charter, sec. 1078.)

(i) He is chairman, *ex officio*, of the Board of Examiners, and nominates the members thereof for appointment by the Board of Education. (Charter, sec. 1089.)

(j) He issues teachers' licenses; renews these licenses, and makes them permanent. (Charter, sec. 1089.)

(k) He keeps in his office eligible lists of teachers. (Charter, sec. 1089.)

(l) He is a member of the Permanent Census Board (Consol. Laws, Chap. 16, Art. 24, Sec. 650), enforces the compulsory education law, nominates attendance officers, and directs their work. (Charter, sec. 1078.)

(m) He prescribes suitable registers, blank forms, and regulations for making reports. (Charter, sec. 1078.)

(n) He reports misconduct, insubordination, neglect of duty, or general inefficiency of any associate superintendent or district superintendent. (Charter, sec. 1078.)

(o) He empowers an associate superintendent to execute duties of his office during absence or disability. (Charter, sec. 1078.)

(p) He appoints and dismisses members of the clerical force of his office, subject to confirmation by the Board of Education. (Charter, sec. 1078.)

(q) He nominates teachers for schools maintained by Department of Public Charities and Department of Correction. (Charter, sec. 1092.)

(r) He is a member of the Board of Retirement. (Charter, sec. 1092.)

The above enumeration is indicative of the number and direction of the lines of responsibility and influence of the City Superintendent. They do not, however, completely represent his real power. This cannot be delimited by statutes or formal regulations, which define, principally, the extent of his administrative authority. His power as the

chief supervisory officer of the school system can be measured only in terms of his personal force and integrity, and his readiness or adroitness in responding to that multitude of unforeseen and unorganized situations which constantly emerge from our modern civic and political life. The fundamental, personal characteristic of supervision¹ means the assumption by him of authorities that are for him and for the school system both necessary and dangerous.

The limitations of this inquiry make it impossible to do more than to express a series of general judgments and recommendations regarding the office of the City Superintendent as at present constituted. Concerning one important feature of the particular issue, the members of the staff engaged on the educational aspects of the School Inquiry are unanimously agreed: That the centralization of large administrative and supervisory authority in the City Superintendent, as provided for by the Revised Charter, was absolutely necessary for the creation of a scheme of responsible school direction free from those prejudices and partisanships that have so often disorganized the institutions and public service of the city. That the schools of Greater New York have, during the past decade, been consolidated into a coherent whole is due, without question, to the perseverance, foresight, and wisdom of the present City Superintendent. His unyielding loyalty to certain of the fundamental principles of school control has brought the policy of centralization to a successful end. No serious study of the facts and circumstances of the development of the school system could lead to any other conclusion.

The City Superintendent has achieved distinguished success in protecting the school system and the teaching staff from the selfish influences that are always found in the public service of a great city—and this is conspicuous service. Through his long term of office, he has naturally aroused strong personal and organized opposition to his policies; but no competent and principled man could do otherwise.

No other educational leader of this generation has had a task of such magnitude and complexity. It is very improbable that any other man could have succeeded as he has in unifying the school system and harmonizing the educational forces of the city. Through his service and performances, the office of city superintendent of schools in this country has been greatly magnified. He has made the New York public school system one of nation-wide significance.

Mechanical consolidation, with the resulting standardization of aims and values, has been effected. The next epoch of educational control will need to be dominated by the idea of establishing a scheme of *decentralized, coöperative, expert* supervision. Military standards of authority and organization cannot be permanently adapted to the enterprise of education. Education, particularly public education, is a great *coöperative* undertaking, and, therefore, must make provision for the

¹ See discussion of the meaning of supervisory control, p. 320.

initiative, independence, and creative activity of every individual charged with responsibility. The administrative efficiency of a great, complex school system demands a high degree of centralization of administrative power. On the other hand, the supervisory efficiency of the school system is conditioned by a degree of coöperation which has not yet been fully comprehended by the City Superintendent.¹ Machinery stifles individuality; coöperative effort expands individuality. The teaching of children and the direction of their education are dependent, ultimately, upon freedom, not repression.

The preëminent difficulty of the existing situation arises, as has already been pointed out,² from the failure clearly to distinguish between effective administrative control and effective supervisory control. In so far as the City Superintendent is an administrative officer, his powers should be broad and direct. As a supervisory officer, he should be the executive agent of the supervisory and teaching staff. In several respects his administrative authority should be enlarged. This is especially true with regard to many of the activities now under the control of the Board of Superintendents. The scope and method of his supervisory functions need to be submitted to thorough study and investigation, far more thorough than is possible during the present Inquiry. Consequently, it has been recommended that the Bureau of Investigation and Appraisal, as proposed in this report, undertake to define the legitimate functions of the City Superintendent as a supervisory officer, with the end of securing to the schools the benefits of the great amount of productive power which, under the present organization, must be latent. The proposed plan of reorganization of the supervisory staff and the creation of the Supervisory Council is merely suggestive of the idea of efficient, coöperative organization.

3. The Board of Superintendents: Organization and Powers

The important questions concerning the Board of Superintendents that present themselves are the following: Has this body the proper constitution, powers, and methods of procedure to enable it to render to the city the maximum of educational service? In other words, is it an effective instrument for the development and maintenance of educational standards, and does it serve to bring about a desirable degree of unity, harmony, and coöperation within the school system?

The general practice throughout the country of supervisory or quasi-supervisory control of schools by a special board or committee, constituted of the City Superintendent of Schools and his deputy, assistant or

¹ See pp. 399-400.

² See pp. 328-29.

associate superintendents, has been generally followed in New York¹ and Brooklyn² prior to the consolidation of 1897. To this special board or committee were given, in greater or less amount, those powers, duties, and responsibilities which, in small communities, and in the earlier stages of the historical development of our municipal school control, belonged to the office of the City Superintendent alone, or were exercised in part directly by the Board of Education.

The charter of 1897 extended the application of the principle involved to the four borough organizations.³

The evident intention of the Revised Charter of 1901 was to bring about such a degree of centralization of control as would enable the establishment of uniform standards throughout the entire school system, and, at the same time, remove those petty differences of policy that had hindered the logical development of available educational opportunities for the people of the city. At the same time, the framers of the educa-

¹"The City Superintendent or his assistants shall visit every school at least once each year, and shall examine the same in all matters prescribed by subdivision 1, section 1040, Consolidation Act of 1882." (By-Laws, Board of Education, 1895, sec. 36, par. 1; also, By-Laws, 1897, sec. 31, par. 5.)

"It shall be the duty of the Board of Superintendents to meet at least twice in each month during the school year for the purpose of consultation, interchange of views, assignment of duties, consideration of reports, and all other matters relating to the efficient management of the schools, in accordance with the provisions of the law relating thereto." (By-Laws, 1897, sec. 32, par. 2.)

²"The associate superintendents (2) shall coöperate with the Superintendent in carrying out the rules of the Board. They shall report to him at such times and in such manner as he shall direct, the results of their several examinations, which shall be subject at all times to the inspection of the members of the Board. The Superintendent shall designate one of his associates to act in his place whenever he is unable to discharge the duties of his office. Should he fail to do so, the Teachers' Committee shall designate the associate." (By-Laws and Rules of the Board of Education of the City of Brooklyn, 1896, sec. 12.)

³"A school board shall have power, by a vote of a majority of its members in office, to appoint a Borough Superintendent of Schools for six years. It shall have power to appoint, for a like term, not more than one Associate Borough Superintendent of Schools for the first seven hundred teachers in the schools under its charge, and not more than one additional Associate Borough Superintendent for every additional three hundred fifty teachers, or fractional number thereof, greater than one-half; provided, however, that there shall be, in any event, two associate Borough Superintendents in the Boroughs of Queens and Richmond respectively." (The Greater New York Charter, 1897, sec. 1102.)

"A Borough Superintendent and the Associate Superintendent therein shall constitute the Board of Superintendents for the Borough, to be known as the Borough Board of Superintendents * * *." (The Greater New York Charter, 1897, sec. 1107, 1.)

"The Borough Superintendents and the Associate Superintendents shall visit every school in their respective Boroughs, and shall inquire into all matters relating to the government, courses of study, methods of teaching, discipline, and conduct of such schools, and the condition of the school houses and of the schools generally, and shall examine classes when necessary. The Borough Superintendents shall report the results of such inspection and examinations to the School Board and to the City Superintendent, who shall transmit such parts of said reports as he may consider necessary or proper to the Board of Education of the City of New York, and they shall also report to the City Superintendent at such times, concerning such matters, and in such form as said Superintendent shall require. * * *" (The Greater New York Charter, 1897, sec. 1108.)

tional sections of the charter recognized the necessity of compromise and of gradual adaptation to new conditions.

The eight associate superintendents of schools, together with the City Superintendent, as chairman, constitute the Board of Superintendents. These associate superintendents are elected by the Board of Education for a term of six years. (Charter, sec. 1079.) Like the City Superintendent, they may be removed for cause at any time by a vote of three-fourths of the members of the Board of Education, and also may be suspended by this board pending a trial of charges. (Charter, sec. 1067.)

Each associate superintendent fulfills two sets of duties; first, as a member of the Board of Superintendents, and, second, as an assistant to the City Superintendent, by whom he is assigned to duty. (Charter, sec. 1078.)

The principal powers and authorities of the Board of Superintendents, as prescribed by the charter and defined by the by-laws of the Board of Education, are:

a. Recommending for approval by the Board of Education the kinds and grades of licenses, and the academic and professional qualifications therefor. (Charter, sec. 1089.)

b. Nominating from eligible lists for appointment, transfer, or promotion, all members of the teaching and supervisory staff. (Charter, sec. 1090.)

c. Determining the fitness and merit of principals and teachers for increase of salary. (Charter, sec. 1091.)

d. Nominating to the Board of Education district superintendents and directors of special branches. (Charter, sec. 1079.)

e. Recommending to the Board of Education the adoption and modification of courses of study. (Charter, sec. 1084.)

f. Issuing syllabuses of the courses of study. (Charter, sec. 1086.)

g. Prescribing regulations for principals for the direction of the methods of teaching. (Charter, sec. 1086.)

h. Recommending to the Board of Education the establishment of schools, kindergartens, and special features in schools. (Annual Report, 1911, p. 13.)

i. Recommending to the Board of Education, for approval, text books and other scholastic supplies. (Charter, sec. 1083.)

j. Recommending to the Board of Education changes in the grades and classes of all schools. (Charter, sec. 1084.)

k. Establishing, subject to the approval of the Board of Education, rules and regulations for the admission, promotion, transfer, and graduation of pupils. (Charter, Sec. 1082.)

l. Keeping records of principals and teachers. (Charter, sec. 1081.)

m. Assigning of special teachers to the several school districts. (Charter, sec. 1085.)

n. Excusing absences of teachers with pay, and granting leave of absence to teachers without pay. (Charter, sec. 1088.)

To carry on its work the Board of Superintendents is organized into appropriate committees. During the year 1910-11 these committees were as follows:

- 1 Committee on the nomination, transfer, and assignment of teachers. (Three members.)
- 2 Committee on school management. (Three members.)
- 3 Committee on course of study. (Three members.)
- 4 Committee on text books, libraries, and supplies. (Three members.)
- 5 Committee on high schools. (Three members.)
- 6 Committee on training schools. (One member.)
- 7 Committee on evening schools. (One member.)
- 8 Committee on vacation schools, playgrounds, and recreation centers. (One member.)
- 9 Committee on compulsory education. (One member.)
- 10 Committee on records, forms, and reports. (One member.)
- 11 Committee on vocational schools and classes for defectives. (One member.)

Each member is chairman of at least one committee, and is a member of one or two other committees. The number of the committees has been increased since the first organization of the board—from six, in 1902-3, to the present number (eleven). Through this means the board has endeavored to meet the newer problems growing out of the increased magnitude and complexity of the school system.

4. The Bureaucracy of the Board of Superintendents

On September 25, 1911, replies to the following questions were requested from the City Superintendent and each of the Associate Superintendents:

1. a. What studies have been made by the Board of Superintendents of its organization, powers, and duties, and what reports have been made by it to the City Superintendent, or to the Board of Education, based on such studies?
- b. Have any such studies or reports been made by you as a member of the board?
- c. Are any such studies or reports on file?
2. a. What phase of your work as an associate superintendent consumes most of your time—constructive educational activities, or routine details?
- b. About what proportion of your time is devoted to the latter?
- c. What proportion, if any, of these routine matters could be delegated to subordinates?
3. What amendments to the by-laws have been passed during the past five years on the recommendation of the Board of Superintendents pertaining to that board?

An analysis of the replies submitted by the City Superintendent of Schools and six of the eight associate superintendents exhibits significant problems and points of view. It is plainly evident from the testimony of the replies to the first question that the Board of Superintendents has unconsciously, or otherwise, permitted itself to remain static, both as to form and function, and, in consequence thereof, to become, to an unnecessary degree, a body exercising bureaucratic functions.¹ It has contented itself with carrying out the prescriptions of the Revised Charter. Neither the board nor any of its members has subjected its organization and prescribed powers and duties to that process of inner evaluation that opens the way for progressive development and ready adjustment.² "Its powers and duties are clearly specified in the law, and have not, therefore, been made a subject of study"³ reflects both the theory and the fact.

The constitution, powers, and duties of this board, under the provisions of the Revised Charter, were the results of recognized compromise. It was, at the time of its organization, perhaps the best instrumentality that could be devised to accomplish the task of bringing about a necessary homogeneity and coherence to the school system of the city. But to assume that, under the multiplying complex needs and rapidly altering conditions of the schools of the metropolitan city, it represented either as to form or function the most serviceable agency for the execution of new educational policies and the development of progressive standards is fatuous. Nevertheless, it appears that an effort to modify

¹ The following statements in answer to question 2 are typical:

- (a) "Most of my time is taken up by routine work."
- (b) "It is, in fact, quite difficult to determine just what portion of my work may be termed routine detail and what of a constructive nature. There is very little of what I do that could be delegated to subordinates."
- (c) "Probably routine duty takes most of my time. With a sufficient force, half of my routine duty could be delegated to subordinates."
- (d) "The only routine details that I recall are the passing on the renewal of teachers' licenses, and the approval of the service of teachers. These involve a careful investigation of the work of the teacher, as reported by principal and district superintendent. Frequently such a detail makes necessary a conference with a teacher, or an observation of her work in the classroom by the associate superintendent in charge of the division. The proportion of time devoted to this routine in my office is comparatively small."
- (e) "It is difficult to say how much work may be regarded as routine. More or less of it may become routine and be done through the clerical force."
- (f) "Clerical work has consumed much of my time. * * * Most of the routine details have a constructive educational aspect; yet most of them might be delegated to faithful subordinates."

² In a supplementary reply dated September 25, 1911, the City Superintendent furnished a list of the recommendations made by the Board of Superintendents to the Board of Education during the period 1906-1911 for the amendment of the By-Laws. With one or two minor exceptions, these recommendations deal with matters of administrative detail. In no instance is there apparent an issue fundamental to the Board of Superintendents itself.

³ Communication of the City Superintendent of Schools to School Inquiry, September 26, 1911.

the organization, or to redefine its functions, has always encountered the strenuous opposition of the members of the board.

For the ready execution of administrative duties the Board of Superintendents is an unwieldy and unnecessarily complicated organization. Since the time of its organization it has tended to become more and more involved in its operation. Fully three-quarters of the matters now brought before, and considered by the Board of Superintendents could be cared for independently by the City Superintendent of Schools, acting in an administrative capacity. Every page of the minutes of the meetings of this board bristles with trivial items, or with matters that could be handled directly by a single competent executive, or regulated automatically by a general rule. The remaining quarter pertains to matters of educational detail and supervisory policy that should be determined upon by those whose activities bring them into constant actual contact with the work of teachers and pupils.

Appendices D and E, which reproduce the official minutes of the Board of Superintendents for two of its regular meetings¹ during 1911, are representative. These particular minutes were selected at random from the published annual volume by an entirely disinterested person. They fairly represent the various types of matters engaging the attention of the board. While it may be argued that all of these items necessitate action by the Board of Superintendents, in compliance with legal requirements, the contention that the machinery of the Board of Superintendents is unnecessary to secure proper administrative control, and too complicated to secure prompt and well-considered action on matters of moment affecting the welfare of schools is still upheld. The usual order of procedure, whereby a multitude of routine matters must go from the school to the district superintendent, from the district superintendent to the Board of Superintendents, there referred to one of its committees for investigation and report back to the Board, then from the Board of Superintendents to the Board of Education, there referred to one of its committees for consideration, from the committee to the Board of Education, thence back to the Board of Superintendents, is one that would not be tolerated by a well-organized industrial or commercial establishment. Indeed, such establishments could not be maintained under such a policy of multiplex checks and balances. The public educational system is one of the city's largest business undertakings. There is no reason why it should not be brought under that general regime of control that has been found necessary for the effective control and economical direction of commercial institutions.

Using as an illustration the minutes of the Board of Superintendents for January 19, 1911,² it may be urged that practically all of the nu-

¹ "The Board of Superintendents shall meet at least twice in each school month during the year. It shall keep minutes of its meetings, which shall be printed, and a copy thereof shall be mailed to each member of the Board of Education." (By-Laws, Board of Education, Sec. 40-5.)

² See p. 410.

merous matters relating to the leave of absence of teachers (Items 3, 4, 5, 8, 13, 18, 19, 30, 31, 32, 33, 34, and 51), to the assignment of teachers (Items 9, 22, 29, 46, 47, 48, 53, 54, 56, and 59), to the transfer of teachers (Items 15, 37, 38, 39, 41, and 43), to the nomination of teachers (Items 16, 17, 20, 24, 27, 40, 44, and 45), could better be regulated by general rules or by a single responsible individual. So also with Items 6, 12, and 21. Similar conclusions may be drawn from a review of the items contained in the minutes of the meeting for October 26, 1911.

The Board of Superintendents has failed to meet, in any complete manner, the obligations laid upon it, and the conclusions of this Inquiry are definite on this point. The primary cause is to be found in the disinclination of the members frankly to appraise their own usefulness as the center of constructive influence, and in their reluctance to weigh the more or less frequent criticisms of the methods and powers of the Board.

5. The Associate Superintendent as a Supervisor of Schools

By the provisions of the charter the City Superintendent of Schools has the power to assign the eight associate superintendents "subject to the by-laws of the Board of Education,¹ to such duties as, in his judgment, will be conducive to the welfare of the public schools of the City of New York." As members of the Board of Superintendents, the associate city superintendents are responsible for the direction and administration of those numerous activities directly and indirectly related to the supervision of instruction. The bearing of these activities upon the performance of the supervisory functions of the associate superintendents has already been discussed. The system of divisional or geographical supervision,² which has been in operation since 1902, whatever may have

¹"The Associate City Superintendents shall perform such service in connection with the duties of their office as the City Superintendent of Schools may direct." (By-Laws, sec. 40-4.)

²"A careful study of the workings of the system in the several districts soon convinced me that responsibility among members of the Board of Superintendents must also be determined and definitely fixed. Such a plan, moreover, I felt would give the teachers and the people a more direct representation in the Board of Superintendents than the charter contemplated. To bring about this improvement I introduced a scheme of grouping several school districts into a division, and assigned to the care of each division one of the Associate City Superintendents. This plan, while not prescribed by the charter, is entirely in consonance with its intent, and certainly is in no way prohibited. I found it expedient to constitute seven of these divisions among the elementary schools, and to place the high schools of the entire city in the eighth division. Under this plan the District Superintendents, and through them the schools in their respective districts, are made directly responsible to an Associate City Superintendent, who, in turn, is responsible for the educational welfare of his division of the city. The Division Superintendent under this plan is supposed to represent directly in the Board of Superintendents the interests of the schools under his charge." (Fifth Annual Report, City Superintendent of Schools, 1903, pp. 13 and 14.)

been its original utility, now quite obviously yields a service of doubtful worth to the schools of the city.¹

The Board of Education and the City Superintendent of Schools were, without doubt, fully warranted in employing the divisional plan of assignment as an expedient to bring about that necessary, though at best, partial adjustment between the demands of a complex and rapidly developing educational situation and the capacities of the individuals whose official position in the school organization was acquired by status rather than by specific fitness for the new service. Nevertheless, it requires an extremely liberal and uncritical estimate of the requisite effectiveness of the system of supervision through the division superintendents to justify its continuance through an entire decade.

It may be fairly assumed that the annual reports of the division superintendents contain pertinent evidence as to the quality of educational, as contrasted with executive or administrative, direction to which the schools of the division are subjected. Chance alone would tend to place in these reports the more significant performances and accomplishments rather than those of a minor or trifling nature. Nevertheless, a systematic survey of the contents of these reports for the past four or five years exhibits in conclusive form the absence of a constructive and projected program for the solution of the many problems confronting schools and teachers. With a few scattered exceptions,² these reports are characterized by casual observation of matters of trifling importance, by a lack of comprehensive scientific insight into the problems of education and of school instruction, by opinionated and unsupported conclusions and recommendations, by unnecessary repetition, by disconnected and conventional commentaries upon the accomplishments of schools. If these

¹ "The assignment of the Associate City Superintendents to the supervision of divisions of the city was first made in 1902, when several different school systems were brought together under a uniform administration. Supervision by geographical divisions seemed at that time to be the only feasible plan. The division superintendents have done good work in bringing the many diverse interests then existing under one harmonious working system. I am convinced, however, that that method of supervision has now rendered the highest service it is calculated to yield, and that the time has arrived when it ought to give place to a system more in harmony with present conditions. Such a plan I hope to put into execution at an early date. It will require each of the associates to devote his time and energy to some particular kind of work throughout the entire city, instead of devoting them to all kinds of work within a limited area." (Twelfth Annual Report, City Superintendent of Schools, 1910, pp. 18 and 19.)

"In my Twelfth Annual Report, I stated my intention of changing the assignment of the Associate City Superintendents, so that each of these officers should be assigned to some particular kind of work throughout the entire city, instead of devoting himself to all kinds of work within a limited area. I have deferred making this change, which I still consider desirable, pending the conclusion of the investigation of our city school system, now in progress by direction of the Board of Estimate and Apportionment." (Thirteenth Annual Report, City Superintendent of Schools, 1911, p. 18.)

² For instance, Straubenmüller's reports on "Retardation and overage Problems," in the Twelfth Annual Report of the City Superintendent of Schools, pp. 225-238; and Thirteenth Annual Report, pp. 235-240; also Edson's report on "Savings in Expenditures," Ninth Annual Report, pp. 179-180.

reports reflect even faintly the directive and constructive efficiency of the division superintendents upon the work of the schools, and certainly the reports, which comprise practically one-tenth of the bulky annual report of the City Superintendent, should do this if they are to become a part of the most important public educational document of the country, we must come to the conclusion that the supervision of schools by the division superintendents is ineffective, unwise, and uneconomical.

This general conclusion is borne out by ample evidence from other sources regarding the work of the division superintendents. Furthermore, the results of this portion of the Inquiry would support the intention of the City Superintendent of Schools to change the method of assignment to duty of the associate superintendents so that each of these officers would devote himself to some particular work throughout the entire city, instead of to the whole problem of instruction within all of the schools of a limited area.

Nevertheless, under the conditions represented by the personnel of the body of associate superintendents and the constitution of the Board of Superintendents, the only way toward greater supervisory, as well as administrative efficiency is through a complete reconstruction of the supervisory organization, and a redistribution of the duties of the members of the supervisory staff.¹

6. General Summary

It appears from the more important of the foregoing considerations, that:

(a) The attitude of the City Superintendent and the associate superintendents, acting either in an individual official capacity, or collectively as the Board of Superintendents, toward the members of the teaching and supervisory staff has discouraged competent criticism of the methods and effectiveness of the school system, and has prevented the development of a necessary spirit of coöperation within the school organization.

(b) The accomplishment of the administrative consolidation of the public school system since 1898 has been due to the constitution of the office of the City Superintendent and to the skill and leadership of the present City Superintendent.

(c) The present machinery of control represented by the City Superintendent, the Board of Superintendents and the associate superintendents is too complicated for effective administration, and too bureaucratic for effective supervision.

(d) A larger concentration of authority over matters of routine and administrative character in the City Superintendent, and a reorganization of the supervisory control so as to provide for a wider, responsible participation of the members of the teaching and supervisory staff in the making and oversight of educational policies are necessary.

¹ See Recommendations I, II and III, pp. 397 ff.

VII

THE BOARD OF EXAMINERS

1. Organization and Functions
 2. The Work of the Board
 3. The Method of the Board
 4. The General Efficiency of the Board
 5. Critical Statement
 6. General Summary
-

1. Organization and Functions

The establishment of the Board of Examiners in 1898 represented the first effective step taken for the unification of the school system of the city. The authorities conferred upon this board by the Revised Charter of 1901 have enabled it to exercise a deep and far-reaching influence. This board consists of the City Superintendent of Schools, together with four persons appointed by the Board of Education for a term of six years, upon the nomination of the City Superintendent.¹ In accordance with the academic qualifications designated by the Board of Education, and on the recommendation of the Board of Superintendents, the Board of Examiners holds such examinations as are prescribed by the City Superintendent of Schools and prepares all eligible lists for principals, branch principals, supervisors, heads of departments, assistants, and all other members of the teaching staff.

"Except as City Superintendent, or associate city superintendent, or district superintendent, as director of a special branch, as principal of or teacher in a training school, or as principal of a high school, no person shall be appointed to any educational position whose name does not appear upon the proper eligible list."²

¹ Charter, Sec. 1089.

² Charter, Sec. 1089.

"1. The Board of Examiners shall consist of the City Superintendent of Schools and of four persons appointed in accordance with Section 1089 of the Charter. The City Superintendent of Schools shall preside over the Board of Examiners. It shall be the duty of the Board of Examiners to conduct the examinations of all applicants required to be licensed as teachers in and for the City of New York. Such examinations shall be conducted in accordance with the requirements fixed by the Board of Education, and at such times as the City Superintendent may direct."

"2. The City Superintendent of Schools shall prescribe the subjects in which

All licenses to teach are issued in the name of the City Superintendent.

Legally, the Board of Examiners has no right to fix the subjects of the examinations, or to determine the percentage for passing an examination, or to determine the conditions upon which examinations may be taken, or to propose requirements for licenses, or to designate the kinds of licenses required. Moreover, its members are dependent for election to office upon the City Superintendent, who has the right of nominating them.

The broad functions of the board, as described by one of its members, are: "To supply to the schools a sufficient number of the best teachers available, keeping out as many as possible of the relatively unfit, and as few as possible of the relatively fit; to encourage those who are licensed to strive for promotion on merit, and to improve their work and themselves in every way possible; to lead the training schools, and other institutions preparing candidates for our examinations, into the most profitable lines of study and practice, the standards and procedure of the Board of Examiners being, naturally, watched with the greatest care by all the 'feeders' of the system; and, in general, to administer the merit system in such a way as to minimize its inherent disadvantages and to gain the full benefit of its, in my judgment, overwhelming advantages."¹

For the readier accomplishment of its many and complex duties, the board is organized into twenty-eight committees:

STANDING COMMITTEES

"Section 7. There shall be the following standing committees:

1. A Committee on Appeals.
2. A Committee on Approval of Courses.
3. A Committee on License as Assistant to Principal.
4. A Committee on By-Laws.
5. A Committee on Licenses to teach Cooking in Elementary Schools.

candidates for licenses shall be examined, and shall determine the percentage which shall be required in order to constitute a successful examination, and also the conditions upon which the examination may be taken.

"3. Graduates of colleges and universities recognized by the Regents of the University of the State of New York, who have pursued for not less than one year pedagogical courses satisfactory to the City Superintendent; graduates of schools and colleges for the training of teachers, approved by the State Superintendent of Public Instruction; and teachers holding a State certificate issued by the State Superintendent of Public Instruction since the year eighteen hundred and seventy-five, or holding a college graduate's certificate issued by the same authority, or persons who on the first Monday of February nineteen hundred and two, were Associate Borough Superintendents of Schools in any Borough of the City of New York, may be exempted, in whole or in part, from such examination, at the discretion of the City Superintendent." (By-Laws of the Board of Education, 1911, Sec. 68.)

¹ Communication of Examiner Walter L. Hervey, October 24, 1911, in response to a series of questions submitted by the Committee on School Inquiry.

6. A Committee on Licenses as Teacher of the Deaf.
7. A Committee on Evening Recreation Center Licenses.
8. A Committee on Evening Elementary and Evening High School Licenses.
9. A Committee on Extension of Licenses.
10. A Committee on Licenses to Teach German in Elementary Schools.
11. A Committee on High School Licenses.
12. A Committee on Licenses to Teach Italian in Elementary Schools.
13. A Committee on Kindergarten Licenses.
14. A Committee on License No. 1.
15. A Committee on Licenses to Teach Manual Training in Elementary Schools.
16. A Committee on Licenses to Teach Music in Elementary Schools.
17. A Committee on Outside Experience.
18. A Committee on Licenses to Teach Physical Training in Elementary Schools.
19. A Committee on License as Principal in Elementary Schools.
20. A Committee on Promotion and Graduating Class Licenses.
21. A Committee on Replacing and Renewal of Licenses.
22. A Committee on Licenses to Teach Sewing in Elementary Schools.
23. A Committee on Licenses to Teach Shop Work in Elementary Schools.
24. A Committee on License to Substitute in Elementary Schools.
25. A Committee on Training School Licenses.
26. A Committee on Truant School Licenses.
27. A Committee on Ungraded Class Licenses.
28. A Committee on Vacation School and Vacation Playground Licenses."

"Section 8. The Committee on Appeals shall consist of four examiners; each of the other committees shall consist of two members."

"Section 9. The chairmanships of the several committees shall pass in rotation, annually, from examiner to examiner, the work being apportioned by mutual agreement, with approximate equality. The second member of each committee of two shall be the examiner who was chairman of that committee for the preceding year."

"Section 10. (a) It shall be the duty of the chairman of a committee, in consultation with his colleague, to conduct the work referred to such committee, and to report thereon to the board.

(b) In the case of those examinations which are announced in one school year and held in the following school year, the committee sched-

uled to conduct the examination shall take charge of matters pertaining to the examination as soon as the announcement is issued."¹

The plan of rotation of committee assignments is calculated to equalize the labor, to keep each member of the board in immediate touch with the entire range of its work, and to subject the conduct of the affairs of the board to progressive revision.

It is plain that the methods employed and the standards maintained by the Board of Examiners not only influence in a very direct manner the quality of teaching in the schools, but also fix the requirements for supervision.²

¹ By-Laws of the Board of Examiners, 1907.

² "The work of the Board of Examiners is more vital to the spread and progress of sound public education than that of any other department of public school administration. Their function is to provide eligible lists of efficient teachers, and to exclude from the schools those who fail to pass 'the required tests of character, scholarship, and general fitness.' The most rigid investigation, if fairly conducted, would demonstrate that the examiners have performed this arduous and delicate task with thoroughness and impartiality. Every influence, however, that would restore the appointment of teachers to the domination of political influence, every institution for the training of teachers in which weak and inefficient work is done, every rejected applicant who can imagine or invent a plausible reason for his failure is apt to be arrayed against the Board of Examiners. The gentlemen who compose that Board, however, as long as they hold office, will not cease to maintain, and, if possible, to elevate the standard for entrance to the teaching profession in this city, and will reject with all necessary firmness the delusion which seems to have taken possession of so many minds, that the examiners may be expected to overlook ignorance and to condone professional inefficiency.

"It is worthy of note that the plan of licensing teachers after tests conducted by an independent Board of Examiners, and of appointing teachers in order of merit from eligible lists prepared by such a board—a plan which has done so much to raise the standard of teaching in our city, and to eliminate political, social, and sectarian influence from the appointment of teachers—has been adopted, and is now followed in Chicago, Ill., in Buffalo, N. Y., and in Newark, N. J. When a city has reached such a size that the selection of teachers has grown too great a task for a superintendent to undertake, then appointment as a result of competitive examination is the only plan as yet invented that meets the exigencies of the situation.

"As far as I am able to learn, the application of competitive examination to the selection of teachers was first proposed by the late George William Curtis, when he was Chancellor of the University of the State of New York. His eloquent words still remain its best justification and defense:

"Is not every argument for the appointment of the great body of ministerial officers of the government by fitness and character wisely ascertained infinitely stronger when applied to the selection of school teachers? And if the selection of those officers by methods which secure their independence, promote their self-respect, and stimulate their interest and zeal, instead of destroying it, greatly increases the efficiency of the public service, elevates the tone of public employment, and removes a reproach from the national name, is it to be apprehended that similar care would harm the character and efficiency of the public schools? In other branches of the public service, whatever objections may be urged against the reformed system of appointment, it is undeniably better than the system which it supplants. Whatever foolish questions may be asked, whatever possible frauds practiced in an examination, they are wholly insignificant when compared to the unspeakable folly and the certain fraud of appointment by patronage or mere personal and partisan favor. There could not be a worse system of selection in all the other branches of the public service. Is it the best one for the great department of primary education?

"Yet is it not substantially the present method? Teacherships in the schools are not popularly regarded as subjects of patronage. But are they not so practically, and is it wise that they should remain so? What is the present system? I believe that the requirement of certification or license before appointment is universal in all

Methods and standards that result in the eligibility of fully qualified teachers reduce the necessity for supervision. Methods and standards that result in the eligibility of partially fit or unfit teachers increase the burden of responsibility placed upon the supervisory staff.

2. The Work of the Board¹

The Board of Examiners does not merely supervise the conduct of examinations; its members personally direct all written tests, and personally interview all applicants who pass such tests; prepare all question papers; actually read a large proportion of answer papers, especially for the more important grades of licenses; supervise, and, in many cases, review the reading of all other answer papers; organize the conduct of all kinds of practical tests in special subjects; carry on in person class room tests of certain large groups of applicants; pass upon the eligibility of applicants under the by-laws of the Board of Education; vote upon all matters of licensing and upon the adoption of all eligible lists; conduct hearings, and consider written appeals of all dissatisfied applicants who demand such consideration; fix salary allowances for outside experience; renew and extend expired or limited licenses; grant or withhold approval of courses of study offered in lieu of certain examinations; recommend to the Board of Superintendents proposed changes in the by-laws of the Board of Education; weigh, and, when advisable, institute changes in the policy, organization, and methods of the board, with respect to the scope and conduct of examinations for any grade or grades of licenses.²

The following table (XI), showing the total number of persons examined for the various grades and kinds of licenses, the number passed and placed upon eligible lists, and the number failed, is indicative of the volume of work committed to the Board of Examiners:

the States of the Union. The examination upon which the certificate or license issues is, then, the cardinal point. What are the vital, essential conditions of effective examination? To be properly effective the examinations must be uniform, entirely competent, and wholly independent of the appointing power. The examiners must be sincerely interested in education, familiar with the duties of a teacher and with the requirements of the art of teaching, and capable of conducting an examination to ascertain both the scholastic attainments and the specific professional fitness of the candidates. Wherever these conditions do not exist the public school system, and therefore the whole community, suffers. It is a common wrong, a common injury. The people of this country tax themselves heavily enough for the support of schools and teachers to entitle them to the best, and to the adoption of all means plainly necessary to secure the best." (From Seventh Annual Report of the City Superintendent of Schools, pp. 80-82.)

¹ In connection with this portion of the report careful consideration has been given to the report of the Special Committee, appointed to investigate the methods, etc., of the Board of Examiners, submitted in 1905 (Minutes of the Board of Education, Nov. 22, 1905).

² Communication of Examiner G. J. Smith, September 28, 1911.

Table XI—Showing Number of Persons Examined, Number Licensed, and Number Failed, 1905-1911¹

	Number Examined.	Number Licensed.	Number Refused.
1905.....	12,181	7,810	4,371
1906.....	11,973	8,126	3,847
1907.....	13,494	10,086	3,408
1908.....	13,522	9,906	3,616
1909.....	13,074	9,536	3,538
1910.....	13,657	9,163	4,442*
1911.....	14,626	10,226	4,400

* 52 pending.

The table XII, on pp. 380 and 381 shows for the years 1909, 1910, 1911, the number of those who passed the examinations for the various grades of licenses and had their names placed upon the proper eligible lists, and the number of those who failed.

A detailed examination of the above table reveals the extent to which the methods and standards of the Board of Examiners select and reject candidates for the several grades of licenses. Particular attention is called to the high percentage of rejections in the case of candidates for licenses as high school teachers, as principals of elementary schools, for promotion, and for the several special branches.

Tables XI and XII likewise represent the magnitude of the responsibility committed to the Board of Examiners. The handling of a total of forty-one thousand cases during three years has required a degree of skill, ingenuity, and foresight not required of any other controlling body in the school system.²

3. The Method of the Board

It is manifestly impossible for this Inquiry to consider in detail the prescribed preliminary qualifications for eligibility for the various kinds and grades of licenses issued for service in the public schools of the city.³ Such consideration should be undertaken in any complete study of the effectiveness of the Board of Examiners, since these preliminary qualifications constitute the first stage of the process of selection of those fitted for the educational service.⁴ It has been assumed that the prescribed conditions of age, education, training, and experience for eligibility for licensing have been established as the best workable balances between the supply of and demand for teachers.

¹ Compiled from the reports of the City Superintendent of Schools.

² "Let me point out the interesting fact that though the work of the Board has increased remarkably in thirteen years * * * the cost of the examination system remains about the same, the increase, if any, being very slight." (Communication of J. A. O'Connell, October 3, 1911.)

³ By-Laws of the Board of Education, Sec. 66.

⁴ "Although the Board of Superintendents, under the Charter, propose to the Board of Education the qualifications for each grade or kind of license, the present By-Laws setting forth such qualifications were, with few exceptions, prepared by the Board of Examiners in 1902." (Communication of Examiner J. A. O'Connell, October 3, 1911.)

Table XII—Showing the Number and Percentage of Licenses Granted, Refused, and Pending During the Years 1909, 1910, and 1911.

[illegible]

SPECIAL BRANCHES—Continued:														
Teachers in Vacation Playgrounds and	3,339	848	4,187	3,073	1,796	4,869	3,578	1,277	4,855	9,990	71.8	3,921	28.2	13,911
Evening Recreation Centers.....	1	3	4							1	25.0	3	75.0	4
Inspectors, Classes for Blind.....	4	13	19							4	21.1	15	78.9	10
Principals, Vocational Schools.....														
EVENING SCHOOLS:														
Evening High School Teachers.....	754	349	1,103	728	120	848	1,059	260	1,319	2,541	77.7	729	32.3	3,270
Evening Elementary School Teachers.....	1,817	543	2,360	1,785	322	2,107	2,235	909	3,144	5,837	76.7	1,774	23.3	7,611
Substitute Licenses.....							122	103	225	122	54.2	103	45.8	235
Total.....	9,536	3,538	13,074	9,165	4,442	52	13,659	10,226	14,626	28,927	70.0	12,380	30.0	41,359
Per Cent.....	72.9	27.1		67.4	32.6		69.9	30.1		70.0		30.0		

In the computation of the percentages the number of licenses pending has been disregarded.

Furthermore, it is not possible to pass upon the scope and detailed characteristics of the examinations for the various grades of licenses. Certain matters of important general policy with respect to these examinations do, however, require brief consideration. These matters include the written examinations in the so-called professional subjects (history and principles of education, psychology, general method, methods of teaching special subjects, school management), the oral examinations, and practical tests.

The questions used, and the scope of the written examinations for License No. 1, may be regarded as typical of the methods and standards of the board.¹

No examination system can be depended upon to select, with absolute accuracy, those best fitted for the service to which the examination pertains. A knowledge of the so-called professional subjects has come to be regarded as an essential element in the preparation of the teacher. And, while a difference of judgment might readily obtain as to the appropriateness of certain of the questions used in the written examinations, and their relationship to the method and aims of effective teaching, a knowledge of the prevailing methods and standards of American institutions for the training of teachers leads me to express general approval of the questions used in the recent examinations as fair tests of professional preparation, and confidence in them as a positive factor in the group of devices employed for the selection of fit teachers.

For the reading and rating of the answer papers of the written examination it is the practice of the Board of Examiners to employ, as assistants, a considerable number of principals and teachers in service. Such an expedient, however necessary under the conditions, must be regarded as introducing numerous elements of unreliability; and steps should be taken for the reading and rating of these papers by persons not immediately connected with the school system.

One other aspect of the whole scheme of formal written examinations has not received from the authorities of the school system the serious attention it deserves. This Inquiry does not attempt, with the evidence at hand, to do more than to emphasize the dangers arising from the system of cramming and coaching for examinations that has grown up in the city. This "forced" professional preparation is most frequently in the hands of individuals whose skill and adroitness serve to vitiate the purposes of the examination. The situation becomes all the more aggravated when such preparation is attempted by those belonging to the active supervisory or teaching staff.

Quite properly, the tests of eligibility and the written examinations are supplemented by the oral and practical tests. In the case of License No. 1, the relative value of the written to the oral and practical tests is shown by the following:

¹ See Appendix F, p. 431, for typical questions used in the written examinations for License No. 1. These questions have been examined and weighed in detail as the basis for the conclusions here expressed.

SCOPE OF EXAMINATION ¹

"IV. The scope of the professional examination for License No. 1, and the passing conditions therein, are as follows:

		—Minimum Required—	
		Women.	Men.
		Jan., 1912—June, 1912.	
Group I—Written Examination:	Maximum Credits.		
(a) History and Principles of Education.....	60		
(b) English (including Methods in English).....	60		
(c) Methods of Teaching.....	90		
Total, Group I.....	210	145	150
Group II—Oral and Practical Tests:			
(d) Drawing	20		
(e) Physical Training.....	10		
(f) Music	10		
(g) Sewing (women only).....	10		
(h) Oral English and Personality.....	20	14	15
(i) Record	20	14	15
Total, Group II.....	90	58	68
Grand Total.....	300	210	218

Since men are not examined in item (g), one-fourth of the ratings received in items (d), (e), and (f) will be added to the total in Group II.

Written tests will not be included in items (e) and (f).

In item (h) the applicant's use of English and general personal fitness for the position of teacher will be estimated.

In item (i) a rating of the applicant's character and record as a student and teacher will be given. Successful experience in teaching for one-half year or more will receive credit when proved by original documents. Experience in practice teaching, or in clerical work, will not receive credit. Substitute teachers in the New York City public schools who have actually taught as substitutes for eighty days or more should, within five days following the examination, file their substitute licenses, properly filled out and certified.

Each applicant must show in the written and oral examinations a satisfactory use of English and a satisfactory knowledge of the subjects embraced in the elementary school course."

The following marking slip is a typical illustration of the general basis of the oral examinations:

BOARD OF EXAMINERS

MARKING SLIP

Oral Examination, Assistant to Principal, Elementary Schools

.....

Date.....

Name.....

Candidate's Number.....

	Mark	Out of	Remarks
Ability in teaching and supervision as evidenced by official record and special reports.....	40	.....
Ability in teaching and supervision as evidenced by classroom test and answers to questions thereon.....	40	.....
Personality.....	20	.....

¹ Circular of November 15, 1911.

Whatever limitations these oral examinations may have, and, notwithstanding the numerous objections that have been raised on account of the influence of indefinite subjective standards of judgment of the examiners, a careful inquiry into the methods by which these oral examinations are conducted gives warrant for the judgment that the Board of Examiners has caused the oral examination system to be an important and valuable factor in the selection of candidates for the eligible lists. If any criticism were to be made, it would be against the leniency of the board in passing persons of doubtful personal and linguistic qualifications. The fact that there are in the schools at the present time so many teachers possessing an inadequate and imperfect command of English points not only to a weakness in the examination system, but also to a laxity in the supervision by the principals and district superintendents who permit the renewal of the licenses of these persons.

Some detailed attention has been given to the classroom tests as applied to those qualifying for principal's license for elementary schools. This classroom test consists of two main parts: (a) A written criticism of a certain assigned class exercise, and (b) the conduct of a recitation upon which an examining officer, principal, district superintendent, or member of the Board of Examiners presents a written estimate. The candidate has no opportunity for any special preparation. Such a practical exercise can hardly be a valid test of either teaching or supervisory capacity. Not only is the test conducted under abnormal teaching conditions, but the standards of judgments applied are, in most instances, wholly unreliable measures of the candidate's real efficiency. For the important office of principal of an elementary school such a teaching and supervisory test should be applied, but it should be continued over a sufficient period—a week at least—under more or less normal conditions, and be subjected to the critical judgment of those of demonstrated competency.

4. The General Efficiency of the Board

Aside from the City Superintendent of Schools, no agency related to the direction and control of the public school system has been the subject of criticism and controversy more than the Board of Examiners. This was an inevitable consequence of the revolutionary changes that came about with the establishment of the board in 1898, and especially after the enlargement of its powers by the Revised Charter in 1901. Prior to 1898 each of the several school organizations now within the metropolitan area had its own methods for the certification and appointment of teachers. Historically, no feature of the development of public education in the United States has offered a more difficult problem than that of removing the selection of teachers from the realm of personal, partisan, and political influence. New York has shared with the rest of the country, especially with the cities, the difficulties arising from this problem.

The Board of Examiners has proved to be a most effective instru-

mentality for the accomplishment of the principal ends for which it was created; that is, to place the appointment of teachers upon a merit basis, and, thereby, isolate the schools from the self-interest of individuals, classes, and parties. This judgment is expressed in spite of any of the inadequacies in the constitution and operation of the board indicated later. Any agency that has protected the teaching force, as has the Board of Examiners, from the influence of forces and motives wholly unrelated to efficiency is entitled to commendation. Unquestionably, mistakes have been made, and individual cases of injustice and maladjustment can be pointed out. But the fundamental policy of this board has contributed to the sound development of schools.

On September 26, 1911, the following questions were submitted by us to each member of the Board of Examiners:

1. What studies, during the past five years, have been made by the Board of Examiners, or by you, as an individual member of the Board, of its organization, powers, duties, and methods, with a view of recommending possible improvements in the efficiency of that board?
2. (a) What recommendations have been made to the City Superintendent, to the Board of Superintendents, or to the Board of Education, based on such studies?
(b) What use was made of such studies and reports?
(c) Are any such studies or reports on file?

The carefully prepared replies to the above questions, when supplemented by other pertinent evidence, warrant the conclusion that the Board of Examiners has exercised its functions in a singularly effective and progressive manner. Since its establishment in 1898 this board has had to create an examination system which would enable the schools to have a sufficient number of teachers of actual or potential efficiency. That the procedure of the board in dealing with the thousands of applicants for teachers' licenses has, in rare instances, resulted in the rejections of qualified candidates would, perhaps, be difficult to disprove, that the same procedure has also resulted in the rejection of a multitude of unfit teachers would be equally difficult to disprove. The methods and results of the teaching staff in the schools of the city to-day undoubtedly are open to criticism. But the burden of this criticism cannot be shifted to the Board of Examiners. The peculiar political, social, and racial conditions obtaining in New York City have rendered the public schools peculiarly liable to party, class, and personal exploitation. That the extent of this exploitation is as limited as it is may be ascribed to the resistance of the Board of Examiners.

A study of the evolution of the methods and standards of the Board indicates that it has devoted a large share of its energy and attention to the improvements of its methods and the elevation of its standards. No one of the agencies for school control has more consciously attempted to

adjust its performances to the changing needs of the school system. In practically every instance the examination requirements for the several kinds of licenses, as they have been developed, exhibit a decided trend in the direction of establishing higher and juster standards of qualification.

5. Critical Statement

Three items relative to the Board of Examiners call for special consideration.

a. The Size of the Board

The present Board of Examiners is too small to accomplish, in the most satisfactory manner, the extensive and diverse duties now devolving upon it. For practical purposes there are but four active members—the City Superintendent, for obvious reasons, not being able to assume any appreciable share of the examination work. The enlargement of the Board proposed in Recommendation IV (p. 401) suggests a way for the extension and improvement of the activities of the Board.

b. The Permanency of the Board

One of the most forceful objections to any examination board, such as the Board of Examiners, centers in the tendency of such boards to become isolated from the actual working conditions of the institution to be served. The examination system tends to become an end in itself. While it is conceded that the general effectiveness with which the Board has carried forward its work is marked, nevertheless, the plan of rotating membership described in Recommendation IV would improve that effectiveness, for it would enable the members of the Board of Examiners to be kept in closer and more vital contact with the schools and their teaching needs.

c. The City Superintendent as the Dominating Member of the Board of Examiners

No inconsiderable amount of the criticism of the Board of Examiners has been directed against the membership of the City Superintendent of Schools and his right to nominate the members of that board. This Inquiry has given careful consideration to this important issue, and, while it is difficult with the means at hand to examine all of the questions raised, our survey and scrutiny of the methods of the Board have convinced us that the membership of the City Superintendent of Schools is desirable from the point of view of securing that very necessary correlation of the controlling agencies. The question of the dependency of the members of the board upon the City Superintendent for nomination, and,

consequently, for appointment, does not appear to be of great moment. This power, in the hands of a selfish or autocratic superintendent, might prove to be dangerous. On the other hand, the great importance of the public schools in the civic economy and progress, together with the widespread public interest in all matters vitally affecting the welfare of the schools, presents a certain guarantee that the City Superintendent of Schools will be an individual whose own professional standing would compel the nomination of examiners having a single interest in the establishment and maintenance of high standards of qualification for teachers. A modern city superintendent of schools must, necessarily, have a jealous regard for the efficiency of the teaching staff.

6. General Summary

It appears, from the more important of the foregoing considerations, that:

(a) The Board of Examiners, by its methods and standards, determines the character of the demands made upon the supervisory staff.

(b) The Board of Examiners has a tremendous annual task in conducting the wide variety of examinations of many thousands of candidates for the teacher's license.

(c) The methods and standards of the Board of Examiners have been such as to select the more fit of those presenting themselves for examination.

(d) The Board of Examiners has sought constantly to adapt itself in a progressive way to the changing needs of the school system.

(e) The constitution of the Board of Examiners so as to include the City Superintendent is to be desired.

(f) The enlargement of the Board of Examiners would contribute to its effectiveness.

VIII

METHODS AND STANDARDS FOR DETERMINING TEACHING EFFICIENCY

1. The Problem
 2. Eligibility for License and Fitness for Teaching
 3. Approval of Service as Fit and Meritorious
 4. The Rated Efficiency of Teachers
 5. Superior Merit
 6. General Summary
-

1. The Problem

One of the greatest issues confronting the public school system of the city is the maintenance of a competent and permanent teaching force in the face of social and other conditions that tend naturally to favor incompetence and to encourage impermanence. By far the greater proportion of the expenditures of the Department of Education is for the salaries of teachers. The organization and operation of the school system must be such as to retain and to reward the fit, and to select and reject the unfit teachers. This work requires the highest form of educational skill on the part of supervisors, especially in this city, with its many thousands of teachers, its many grades of positions, and its many scales of compensation. For the supervisory staff exists, primarily, to establish and to elevate standards of teaching performances. It is, therefore, pertinent to scrutinize the methods employed and the standards set up for determining the fitness of those who are to constitute the body of fully qualified teachers and supervisors.

2. Eligibility for License and Fitness for Teaching

The tests applied by the Board of Examiners are tests of probable fitness. In reality, the work of this board constitutes but the first step in the process of selection. The real fitness of teachers must finally be determined under conditions of actual service.

The continuation of the selective process begun by the Board of Examiners, through the preparation of eligible lists, is provided for through the issuance of temporary licenses, which are renewed without examination, in case the service of the holder is satisfactory to the City Superintendent, for two successive years. At the close of the third year

of continuous successful service the City Superintendent is authorized to make the license permanent.¹ In other words, the initial license granted to any teacher or principal is a probationary license, which does not become permanent until after three years of successful service. The responsibility of the Board of Examiners for the character and fitness of the teaching force is thus, after appointment, transferred to the supervisory staff—district superintendents, directors, and principals. The examiners and the supervisors become jointly responsible for those who acquire the important status represented by the permanent licenses.

The following table (XIII, p. 390), showing the number of licenses renewed, number refused, and number made permanent for the three years 1909, 1910 and 1911, and also the number of teachers whose services were approved or disapproved for the years 1909 and 1910, furnishes the basis for conclusions that bear indirectly upon the performances of the Board of Examiners and the supervisory staff.

From Table XIII it appears that a very few of the temporary licenses fail of renewal in due course. Roughly, 5 per cent. of these licenses are renewed a third time before being made permanent; one-half of 1 per cent. of the licenses are renewed four or more times. For the three years under consideration approximately only 1 per cent. of those licensed had their permanent licenses refused.

Several assumptions may be brought forward in explanation of the above conditions:—

First: It may be assumed that the tests applied by the Board of Examiners were such as to select only those who were certain to prove successful. On the average the licensee has ninety-nine chances out of a hundred of securing a permanent license;

Second: It may be assumed that the standards of effective service applied by the supervisory staff are not high, and thus permit practically all to reach the status of permanent tenure;

Third: It may be assumed that, with the assistance, and, under the stimulus of competent supervision, those of mediocre or less ability were trained and developed to a point justifying permanent retention;

Fourth: It may be assumed that the demand for teachers so nearly approaches the available supply as to render necessary the permanent licensing of practically all of those appointed from the eligible lists of the Board of Examiners; or

Fifth: It may be assumed that those who foresaw failure resigned, thereby not raising the question of final refusal to renew the license.

An extended examination of the data of the past five years, relative to the renewal of License No. 1, in connection with the data of Table XIII, is sufficient to eliminate the fifth assumption. A certain limited force may be attached to the fourth assumption. The rapid growth of the school system has produced a demand for teachers that has taxed to

¹ Charter, Sec. 1089.

Table XIII—Showing Licenses Renewed, Refused, and Made Permanent for the Three Years 1909-1910-1911, Inclusive; Also Number of Teachers Whose Services Were Approved or Disapproved for the Years 1910 and 1911.¹

GRADE	LICENSES RENEWED AND MADE PERMANENT						
	First Renewal	Second Renewal	Third Renewal	Fourth Renewal and Over	Made Perma- nent	Refused	Total
TRAINING SCHOOLS.							
Critic.....	8	10	.....	.....	8	.....	26
Model Teacher.....	16	17	.....	.....	11	.....	44
First Assistant.....	9	8	.....	.....	9	.....	26
Assistant.....	22	23	2	.....	26	.....	73
HIGH SCHOOLS:							
Principal.....	5	5	.....	.....	4	.....	14
First Assistant.....	44	51	.....	.....	32	.....	127
Assistant.....	347	341	19	3	329	1	1,040
Junior Teacher.....	70	23	.....	.....	3	2	98
ELEMENTARY SCHOOLS:							
Principal.....	68	66	.....	.....	62	.....	196
Assistant to Principal.....	40	67	2	.....	24	.....	133
Head of Department.....	94	28	.....	1	30	1	154
Graduating Class.....	52	47	.....	.....	29	.....	128
Promotion.....	4	.....	.....	.....	.....	.....	4
License No. 1.....	3,213	3,337	191	19	3,265	34	10,059
Kindergarten.....	296	285	10	2	260	1	854
Drawing.....	12	13	.....	.....	14	.....	39
Direct. of Phys. Training.....	1	1	.....	.....	.....	.....	2
Asst. Direct. of Phys. Training.....	1	1	.....	.....	.....	.....	2
Music.....	11	11	.....	.....	7	.....	29
Sewing.....	14	15	.....	.....	14	.....	43
Cooking.....	67	70	.....	.....	53	.....	190
Shopwork.....	46	47	1	.....	43	3	140
German.....	10	9	.....	.....	12	.....	31
Physical Training.....	14	17	.....	.....	15	.....	46
Teacher of Deaf.....	16	12	.....	.....	.....	.....	28
Inspector of Blind.....	.....	1	.....	.....	1	.....	2
Inspector of Ungraded Classes.....	.....	1	.....	.....	1	.....	2
Teacher.....	1	3	2	.....	8	.....	14
Asst. Teacher " ".....	16	12	.....	.....	2	.....	30
Inspector of P. S. Athletics.....	1	.....	.....	.....	.....	1	2
Asst. Inspect. P. S. Athletics.....	3	3	.....	.....	2	.....	8
TRUANT SCHOOL:							
Principal.....	1	1	.....	.....	.....	.....	2
Assistant Teacher.....	.....	4	1	.....	3	.....	8
VOCATIONAL SCHOOL:							
Principal.....	.....	1	.....	.....	.....	.....	1
Totals.....	4,502	4,530	228	25	4,267	43	13,595
1909.....	1,557	1,680	80	11	1,273	13	4,614
1910.....	1,367	1,512	95	14	1,556	19	4,563
1911.....	1,578	1,338	53	0	1,438	11	4,418

1910, Number of teachers whose services were approved.....	1,587	Disapproved, 162
1911, Number of teachers whose services were approved.....	1,575	Disapproved, 180

Totals.....	3,162	342
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¹ Compiled from Reports of City Superintendent of Schools and the Minutes of the Board of Superintendents.

the limit the available supply.¹ That the third assumption has a certain validity is borne out by the undoubted efforts made by district superintendents and principals to prevent a teacher from becoming a complete failure. In view of recognized limitations of all examination systems to select with accuracy those fit for efficient service, the second assumption, as to the standards whereby service is approved, requires attention.

The renewal of temporary licenses of teachers and principals appointed for service is based upon the reports made to the City Superintendent by the several supervisory officers. These reports presumably represent the result of a critical and complete examination of the performances of the holder of the license. The examinations upon which these reports are made are shown in Appendix G:² (a) Elementary Schools; (b) High and Training Schools; (c) Special Teachers; and (d) Principals and Assistants to Principal.

Many hundreds of these reports for recent years, as filed in the office of the City Superintendent, were examined in detail. In addition, many personal inspections have been made of the methods used by district superintendents and principals in passing upon the qualifications of teachers whose licenses were to be renewed. On the basis of the evidence developed the following conclusions seem to be warranted:

(a) That the reports of service for the renewal of temporary licenses are, in the great majority of cases, purely formal, on the part both of the principal³ and the district superintendent. The terms "excellent," "good," "poor," "satisfactory," "unsatisfactory," representing, as they do, the general form in which the judgments are expressed, are too indefinite, vague, and subjective to have reliability. The multitude of duties that must be performed by the district superintendent practically preclude any but very brief and superficial examinations of the methods or the success of teachers as represented by the progress of the pupils.⁴

¹ "Permit me to say further, and in conclusion, that in the light of our experience in sifting out the relatively fit from the absolutely unfit (both the fit and the unfit oftentimes presenting identical academic and professional credentials) nothing could be more disastrous—nothing could be more absurd—than to use the fact of a temporary dearth of teachers, due to ascertained and removable causes, as a pretext for a general letting down of the bars." (Examiner W. L. Hervey, Ninth Annual Report to the City Superintendent, p. 399.)

² See pp. 443 ff. for these forms.

³ The by-laws of the Board of Education (Sec. 43, sub. 6) contain the excellent provision that "Principals shall keep a record of all class inspections and examinations, of conferences with teachers * * *" In not a single one of twenty-one elementary schools visited was I able to discover such a record, which as to form or content would serve as a basis for making a reliable report upon the work of the teachers. In many instances the principal apparently had no conception of what such a record might contain. These principals preferred to make their estimate of the teacher on the basis of a "general impression." In other instances principals frankly said that they had no time for the recording of the results of their observations of the teacher's work.

⁴ Six district superintendents permitted me to accompany them during times when they were engaged in passing upon teachers whose licenses were up for renewal. In some instances a whole day was devoted to this, and others a half day. With almost

(b) That these reports should be in such form as to oblige both the principal and the district superintendents to present detailed *positive* evidence in support of the renewal of licenses. The reports should also show the number and duration of visits and the variety of work inspected, together with other pertinent supplementary evidence.

(c) That the supervisory authorities should aim to unify the standards according to which the work of probationary teachers is approved. It is plainly evident that, in various parts of the city, radically diverse standards are employed by supervisory officers in determining the renewal of a teacher's license.

(d) That the approval of the first year of service should rest entirely with the principal, or, in the case of teachers of special branches, with the director; that the second renewal should be based upon a careful examination of the teacher's work by the district superintendent; that the third and final renewal should be made as a result of an inspection of the teacher's work by an independent inspector;¹ that the recommendation of the division superintendent, as now provided for—since it is by the condition of things purely formal—be eliminated.

Only after the work of those holding temporary licenses is subjected to a closer and more rigid scrutiny than now obtains, and, only after there is a greater centering of individual responsibility for approval of probationary work will the fitness and competency of those who become members of the permanent teaching staff be fairly guaranteed.

3. Approval of Service as Fit and Meritorious

The relation of compensation to quality of service has been, and will continue to be, one of the perplexing issues confronting those immediately responsible for the improvement of the teaching corps. Beginning with the passage of the Ahearn Law (1899) an endeavor has been made by legislative measures, the Davis Law (1900) and the Grady Law (1911), to establish such graduated schedule of compensation as seems to be consistent with grade, quality, and duration of service. It is not proposed here to enter into any discussion of a difficult, and still unsettled, question of the proper compensation for the various classes of teachers in the different grades of schools. It has, however, been considered to be within the immediate responsibility of the Inquiry to pass upon certain general practices which vitally influence the workings of the salary schedules.

Prior to January 1, 1912, the salaries of principals and teachers were

no exception a superintendent's decision was founded upon a very brief visit, of from five to fifteen minutes, to the classroom. Sometimes, though not always, this inspection was supplemented by a brief conference with the principal.

¹ It is contemplated that the proposed Bureau of Investigation and Appraisal contain a certain number of individuals, whose time shall be spent in such service as herein indicated. See Recommendation III, p. 401.

based upon the graduated minima established by the so-called Davis Law and incorporated in the charter.¹

This law provided that no one of the specified members of the supervisory or teaching staff in elementary schools should receive a salary greater than that fixed for the *seventh* year of service, nor for the *twelfth* year of service, "*unless and until the service of any such member shall have been approved, after inspection and investigation, as fit and meritorious by a majority of the Board of Superintendents.*" This law also provided that no member of the supervisory and teaching staff of any high or training school should receive a salary greater than that fixed for the *fourth* year of service, nor a salary greater than that fixed for the *ninth* year of service, until a similar approval of service as fit and meritorious had been made.

The theory of the Davis law was that salaries should be regulated by a compensation by merit, grade taught, length of service, and experience in teaching.

The salary schedule adopted by the Board of Education on May 17 and May 24, 1911, which became the basis of the amendment to the Davis Law, as incorporated into the charter (Chapter 902, Laws of 1911), besides readjusting and equalizing the salaries for men and women, emphasized the principle of merit by providing that no teacher in an elementary school should receive a salary greater than that fixed by the *third* year of service, nor a salary greater than that fixed for the *sixth* year of service, nor a salary greater than that fixed for the *ninth* year of service, nor a salary greater than that for the *twelfth* year of service, nor a salary greater than that fixed for the *fifteenth* year of service until the service of such teachers shall have been approved as fit and meritorious by a majority of the Board of Superintendents.²

The forms for the special reports on the work of elementary school teachers, whose service is to be approved for advance in salary, are given in Appendix H.³ The general criticisms already presented of the methods and standards of supervisory officers in preparing reports upon the work of teachers whose licenses are to be renewed will also hold as applying to the approval of service as "fit and meritorious." The relatively few disapprovals of service (see Table XIII, p. 380) can scarcely be interpreted as signifying a uniformly high level of teaching performance. On the contrary, it means, in all probability, the employment of a very lenient standard by approving officers.

4. The Rated Efficiency of Teachers

As a logical development of the machinery for the control and improvement of the teaching staff there has been built up a more or less elaborate system of regular reports upon the performances of teachers.

¹ Charter, Sec. 1091.

² By-Laws of the Board of Education, sec. 65, subsec. 14.

³ See pp. 449 ff.

Certain of the forms upon which these ratings are recorded are presented in Appendix I:¹

- a. Annual Rating of Teachers by District Superintendent.
- b. Semi-annual Rating of Teachers by Principal.
- c. Annual Rating of Principals by District Superintendent.
- d. Annual Rating of Assistants to Principals by District Superintendent.

The ratings presented on these forms by the several supervisory officers become a part of the teacher's permanent record.

Certain observations have already been made with regard to the ratings of elementary school principals by district superintendents.² As a means of studying the general character of these ratings as measures of teaching efficiency, the data of Table XIV were assembled. This table shows the ratings of elementary and high school teachers as made by district superintendents and principals in June, 1911. It is evident that the ratings of all of the teachers in the school system could not be included; therefore, by an arbitrary method of selection, every tenth elementary school and every other high school in the several boroughs were selected.

An examination of Table XIV brings to light certain important facts:

First: The insignificantly few teachers who are regarded by principals and district superintendents as rendering non-meritorious service. Of the 1984 elementary school teachers rated by district superintendents but 11 (.6 of 1 per cent.) were rated as non-meritorious in discipline. Of the 2235 elementary school teachers rated by principals but 11 (.5 of 1 per cent.) were rated as non-meritorious in instruction; of the 2217 teachers rated on discipline but 19 (.9 of 1 per cent.) were regarded as non-meritorious. But one teacher out of these 2217 was rated as wholly deficient in discipline. A similar situation exists with the ratings of high school teachers.

Second: The wide variation between the ratings of principals and the ratings of district superintendents cannot be passed by without mention. The tendency seems to be for the district superintendent, as a matter of form, to discount the ratings given teachers by principals.

The figures presented in columns 18 and 19 (elementary schools), and columns 19 and 20 (high schools), bear directly upon this point. In these columns is recorded the number of teachers rated by the district superintendents and the principals, respectively, as, A in discipline, and A in instruction.

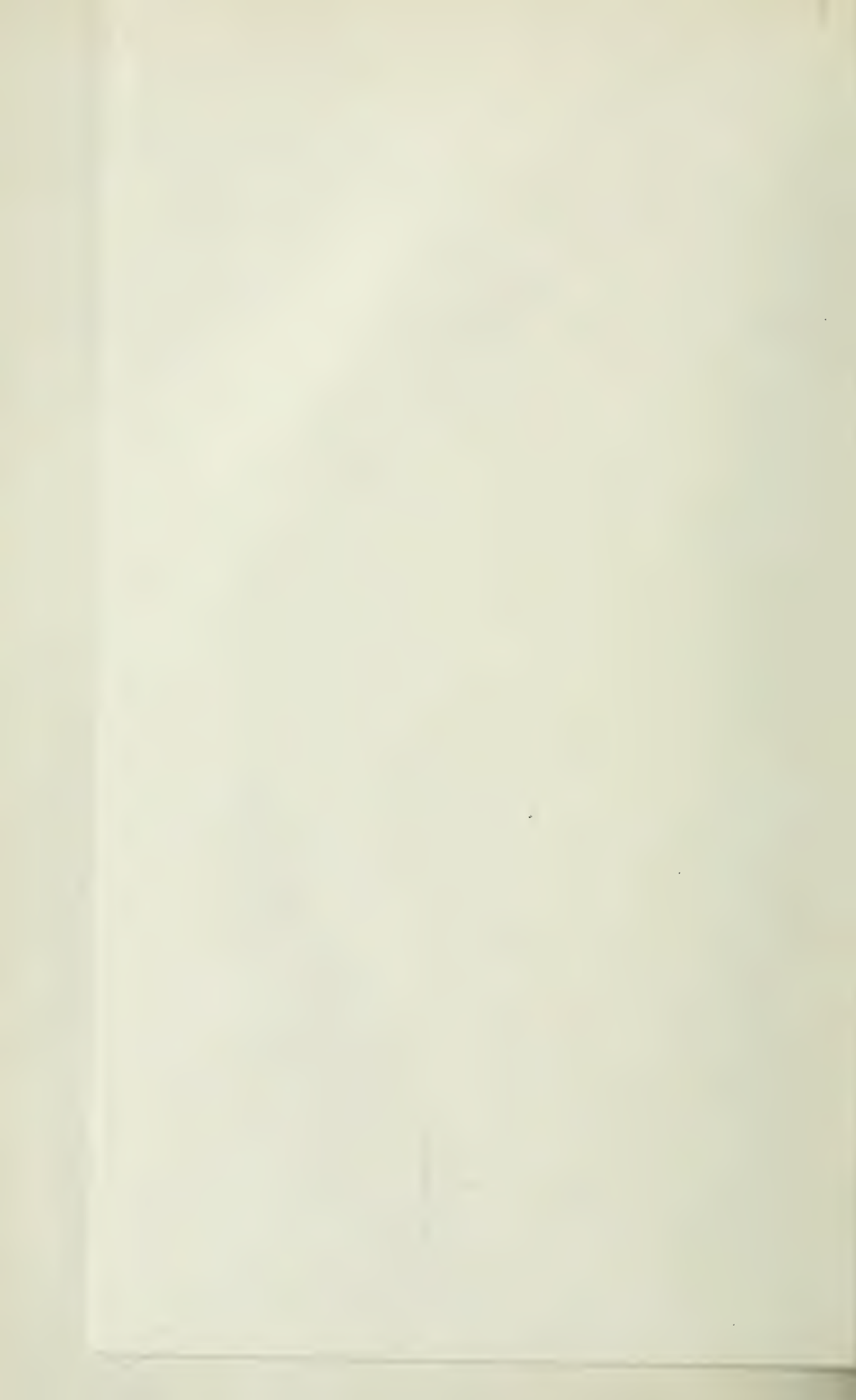
In 23 Manhattan schools, 31 per cent. of the teachers were rated A-A by their principals. The district superintendents so rated but 16.2 per cent. of the teachers. In 5 schools in the Borough of the Bronx prin-

¹ See Appendix, pp. 453 ff.

² See Section IV, The District Superintendents, p. 351.

ELEMENTARY SCHOOLS

HIGH SCHOOLS



cipals rated 59 teachers as A-A, whereas the district superintendents reduced this number to 8. In 17 Brooklyn schools the 149 A-A teachers, in the estimation of the principal, were reduced to 57 by the district superintendents. In 10 schools in the Borough of Queens 173 teachers were rated A-A by the principal; but one-tenth of this number were so rated by the district superintendent. In the case of the high schools this variation is all the more marked. Of the 877 teachers rated in 10 high schools in the city 345 (40.2 per cent.) were rated A-A by the principals. But one-sixth only of this number (58) were regarded as A-A by the district superintendent.

Third: The very wide variation between the quality of service of teachers of the different elementary schools, and high schools also, as represented by the ratings of the principals of these schools, must be accounted for either by difference in standards or difference in principals. In any event, the exhibition of Table XIV is such as to raise the question as to whether the rating system as now pursued affords any sound and just basis for according salary increases.

Fourth: The distinction between "instruction" and "discipline" is purely arbitrary and artificial. To an impartial judge the founding of a rating scheme for the teaching force of a metropolitan school system upon such a traditional convention as this is ample evidence that the supervisory authorities have not assumed a scientific attitude of mind toward the complicated teaching process.

The general conclusions as to the existing methods and standards for determining "fit and meritorious" service are that there is no method other than that of the personal idiosyncrasy of supervisors, and that there are no standards that bear intimate and valid relation to the quality of service rendered.

5. Superior Merit

The salary schedules that became effective on January 1, 1912, in accordance with the revision made under the so-called Equal Salary Law, introduced another important factor into the question of determining the relative fitness of the members of the permanent teaching force of high schools. This new factor is now familiarly known as "superior merit."¹

It is not proposed to engage in a discussion of a question that is still

¹"No one shall advance beyond the salary of the *ninth* year unless, after investigation and inspection, he is declared, on the report of a committee consisting of an Associate City Superintendent, a District Superintendent, and a principal, by a majority vote of all the members of the Board of Examiners (the District Superintendent and principal having a right to vote), to be a teacher of superior merit."

"No one shall advance beyond the salary of the *twelfth* year unless, after investigation and inspection, he is declared, on the report of a committee consisting of an Associate City Superintendent, a District Superintendent, and a principal, by a majority vote of all the members of the Board of Examiners (the District Superintendent and principal having a right to vote), to be a teacher of superior merit." (Board of Education—By-Laws—Supplement—Sec. 65, Sub. 17, p. 11.)

of a controversial nature. However, it is within the reasonable province of the Inquiry to express unqualified approval of the fundamental principle involved in the *superior merit* provisions, and also to express the judgment that its careful application will probably result in a more intelligent and more just procedure to be followed in approving the service of teachers for renewal of license, and in determining service that is "fit and meritorious."

It is certain that the comprehensive special report¹ on the work of high school teachers who became subject to the provisions of the superior merit requirements reflected in a striking manner the widely divergent standards existing among principals of high schools as to what constituted conspicuous performance.²

The New York high schools will not have superior merit teachers until New York principals have genuine superior merit standards.³

6. General Summary

It appears, from the more important of the foregoing considerations, that:

(a) The determination of the fitness or unfitness of teachers for continuance and promotion in the school system represents the chief task of the supervisory staff and the best test of its service to the schools.

(b) The certainty with which the initial probationary license is renewed to permanency may be largely accounted for by formality that characterizes the inspections and reports upon service.

(c) The approval of service as "fit and meritorious" does not depend upon thorough and impersonal inspections necessary for obtaining any true measure of a teacher's efficiency.

(d) The means and methods for the regular annual and semi-annual ratings of teachers and principals are not such as to produce results commensurate with the labor involved or calculated to raise the level of teaching performance within the schools.

(e) The principle of "superior merit," for teachers in high schools introduced by the salary legislation of 1911 is a valid one, capable of serviceable extension to the teachers in elementary schools.

¹ See Appendix J, p. 455, for the form of this special report.

² These divergent standards have become well recognized during the numerous discussions that have been developed since the application of the principles of superior merit. My own personal evidence upon this point was gathered at a meeting of the High School Principals' Association, at which the principals themselves discussed the elements that should enter into the superior merit. These elements varied from that of the number of pupils of a teacher who passed the Regents' Examinations to that of mere subjective impression of the teacher's worth in the schoolroom.

³ Attendance upon several sessions of the Board of Examiners during which superior merit cases were being determined showed the large importance of the annual and semi-annual ratings of teachers. One of the weakest points in the first application of the principle of superior merit, during the early part of 1911, consisted in basing this new standard of teaching attainment very largely upon the already existing, but inadequate and unreliable, system of rating teachers.

IX

RECOMMENDATIONS FOR THE REORGANIZATION OF THE SUPERVISORY STAFF

1. Board of Superintendents to be Abolished
2. Supervisory Council to be Created
3. Bureau of Investigation and Appraisal to be Established
4. Board of Examiners to be Reorganized

The survey that has been made by this portion of the Inquiry has led to the following four recommendations for the reorganization of the supervisory staff. Through these recommendations an effort has been made to concentrate attention upon those official agencies and forces that, from their strategic position, and by their constitution and nature, exert a determining influence upon the character and effectiveness of the accomplishments of the schools of the city. The inadequacies of the school system cannot be removed, nor the maladjustments corrected, without treating directly these tap-roots of control.

Recommendation I

That appropriate steps be taken to secure the necessary legislation for the abolishment of the Board of Superintendents and the position of associate city superintendent; and that a careful, detailed study¹ be made of the powers and duties now belonging to the City Superintendent, to the Board of Superintendents, and to the associate city superintendents, to the end of securing a more efficient and economical distribution of the necessary administrative and supervisory powers and duties among the City Superintendent, the proposed Supervisory Council, the district superintendents, and the principals of schools.

The arguments in support of this recommendation may be summarized as follows:

(1) Under the existing form and method of control of the school system the Board of Superintendents is charged with the exercise of the three varieties of control functions: (a) administrative, (b) supervisory, and (c) inspectorial—already described.² While, under the conditions that obtain in the school organization of a small city, these three classes of functions are not independent or mutually exclusive as to character and object, the magnitude of the demands and the complexity of

¹ By the proposed Bureau of Investigation and Appraisal; or by the Board of Education, pending the establishment of such Bureau.

² See Prefatory Note, p. 319.

the activities of the New York City public school system are such as to necessitate specialization for performance and for fixation of responsibility. Until these distinctions in the several varieties of school control are recognized and provided for, there will continue to be, as now, a constant duplication of effort and a friction of operation of the constituted agencies.

(2) As an agency for the prompt and effective performance of executive and administrative duties the Board of Superintendents is unnecessarily complicated in its organization and methods of procedure. Of its general powers and duties, as enumerated by the charter, and in the by-laws of the Board of Education, there is none that could not be more effectively, economically, and promptly performed under the direction of a single administrative officer. Of the principal powers and authorities of the Board of Superintendents, as enumerated on page 367 of this report, items b, h, j, l, m, and n might properly fall within the exclusive jurisdiction of the city superintendent. Items a, e, f, g, i, and k should belong to a representative body of supervisors and teachers. Item c cannot literally be carried out by a board. Item d raises the issue as to whether or not the district superintendents and directors should not be nominated from an eligible list, as are principals and teachers.

(3) The abolishment of the Board of Superintendents is necessary in order more definitely to fix responsibility for the requisite administrative control of the schools. At the present time there is too much divided responsibility, and, consequently, too great opportunity for bureaucratic and personal control.

(4) A careful examination of the minutes of the Board of Superintendents for the past three years produces abundant evidence for the conclusions that the time and energy of the board, as a board, are taken up with matters requiring abilities of a high-grade clerical character rather than the combined services of nine high-priced, and presumably expert, educational directors.

(5) As supervisory officers the members of the Board of Superintendents are too far removed from the actual conditions confronting teachers, schools, and neighborhoods to render the most needed form of service. There are no valid reasons for giving to this body complete authority over the activities and freedom of those who are primarily responsible for the accomplishments and progress of the pupils.

(6) The proper inspection and appraisal of the work of the school system require capacities and training radically different from those of an administrative officer, and an attitude of mind inconsistent with responsibility for the performance of routine tasks.

(7) The members of the teaching and supervisory staff, as well as the people of the community, have a right to a readiness and promptness in the working of the administrative machinery not possible under the present, multiplicity of checks and balances contained in the Board of Superintendents.

Recommendation II

That appropriate steps be taken to secure the creation of a Supervisory Council to be composed of the City Superintendent, all of the district superintendents, and a selected number of directors, principals of training schools, principals of high schools, principals of elementary schools, and representatives from the teaching staff in the various types and grades of schools.

To this Supervisory Council should be given general powers and directions with regard to programs of study, and all other essential matters relating to the methods and standards of instruction. Until such a representative board is charged with educational responsibility, the city cannot hope to secure the most efficient service, nor will teachers be given a degree of freedom consistent with the effective performance of the duties given to them. In support of this proposition the following may be offered:

(1) As already argued in this report, the effectiveness of the control of a school system is measured by the degree to which there is provision for coöperation of all of those responsible for results. The chief evil of the existing scheme of control is to be found in the disinclination to utilize the experience of the great body of teachers and supervisors who always make up the advance guard of stable progress.¹

¹ On May 26, 1912, the following letter was sent to the officers of twenty-six voluntary associations of teachers:

"MY DEAR SIR:

"Will you kindly give me, for our use in connection with the School Inquiry, the aims of your association and the number of members, and a brief statement of the work which the association has done in the last five years?"

"Also, will you kindly let me know what consideration has been given to your results by the Department of Education—the Board of Superintendents and the Board of Education?"

"I am sending a letter like this to the president of each of the voluntary associations of teachers, so far as we know what these associations are. I shall be greatly obliged to you for a reply at your earliest convenience."

Replies were received from eighteen associations. While certain of these organizations have as an avowed object the protection and advancement of the material interests of their members, the majority aim to promote the educational interests of the schools. It is clearly evident from the statements made as to the objects and work of the associations having a distinctly professional aim, that a genuine effort has been made to assist in the solution of a large number of the internal problems of the schools, but that the school authorities have not sought to utilize the large amount of energy and interest available. The following paragraphs from the replies are significant in this connection:

(a) "Just what the reception of such resolutions was by the Board of Superintendents or Board of Education is hard to say. We do not know. In general the communications have received consideration which has in all probability been much oftener favorable than unfavorable, though not by any means universally so."

(b) "Some of our recommendations were adopted by the authorities; but these were mainly on matters of minor importance—matters of routine administration. Recommendations on such matters as salaries, school organization, courses of study, and the like, were seldom if ever adopted wholly; they were received usually with a promise

(2) At the present time the extent to which the members of the teaching and supervisory staff (district superintendents, directors, and principals) are permitted to participate in the making of the internal policy of the school system is wholly within the personal choice of the City Superintendent or the Board of Superintendents. If participation is desired, it is requested or commanded. It is not one of the rights and obligations of the members of the teaching and supervisory staff. *A truly progressive educational policy within the school system requires that cooperation be legalized.* No school system fulfills its existence under a control that is feudal in character.

of consideration, and possibly exerted some influence in determining the final disposition of the matter."

(c) "From the Board of Education we asked for the appointment of as many men as possible in December, 1911, to avoid the reduction of the Equal Pay schedules. This request was granted. We have asked many other favors for the schools which we have generally received. Save from the passing of the Equal Pay schedules (in which the Board of Education reduced by nearly one-third (1-3) the salaries of men hereafter to be employed in the elementary schools), the Board of Education has always given our requests most considerate and respectful attention.

"The Board of Superintendents has, on the other hand, preferred to deal with * * * always as individuals. Our Association is loyal to the Board of Education, and to the Board of Superintendents, but with no reciprocal action on the part of the latter."

(d) "So far as any evidence has come to us, no attention (not even acknowledgment) has been paid by the Superintendents to any of the above."

(e) "Our Association has had about five hundred members each year, and our work has been—Opposition to a decrease in the salaries of our members in order to secure 'Equal Pay'—A study of Teachers' Ratings and Promotions, Clerical Work, Discipline, Correlation between Elementary and High Schools, and Improvements in the Course of Study.

"I regret to state that very little consideration has been given us in the above matters."

(f) "We have published a number of reports, one on the course of study for elementary schools, one on the necessity for men teachers, one on supervision, one on congestion in the city schools, and others. I cannot recall that one of these reports ever received the slightest consideration on the part of the present administrative officials of the Board of Education, although most of these efforts were most favorably and widely commented upon."

(g) "About five years ago we received a formal request from Superintendent * * * that we formulate a course of study. To this end we devoted several regular and extra meetings, for at least a year, and, after considerable discussion and labor, agreed upon a course of study * * *

"This plan was submitted to Superintendent * * * and to * * *, but no action was taken by them. In fact, it was never heard of afterward."

(h) "So far as I recall, no attempt was made to improve conditions; some think merely because the suggestion originated at the bottom instead of at the top of the school system."

(i) "But within the past five or six years, recommendations and suggestions addressed to the City Superintendent have received little or no recognition—frequently not even acknowledgment. In some cases, however, our suggestions have seemed to cause the authorities at Fifty-ninth Street to act, though we have not received credit for starting the action."

(j) "Every recommendation our association has made to these bodies has been received in the most kindly spirit, and has always been given the most careful consideration."

Recommendation III

That there be established, as an integral part of the system of school control, a Bureau or Division of Investigation and Appraisal.

This bureau or division should be in charge of a chief or superintendent, who is directly responsible to the Board of Education, and should be organized in such a manner as to enable it to serve as the central agency for the gathering and interpretation of statistical and other data with reference to the schools; and also for the carrying on of such investigations as are necessary for the rational development and expansion of the school system. It should bear the same general relation to the Department of Education as the existing Bureau of Municipal Investigation and Statistics bears to the Department of Finance.

The following arguments may be indicated:

(1) The school system of the city suffers from a lack of definite, detailed knowledge of its own working and its own cost. As has already been pointed out,¹ the fundamental importance of the inspectorial form of control has been recognized only to a very limited extent. And even where its importance is recognized officials charged with the responsibility for administrative or supervisory duty appraise their own performances. Investigation that is needed is not carried on at all.

(2) It is evident that one of two things will result in the immediate future. Either the work indicated for this proposed bureau will be attempted by agencies outside of the school system or else there must be established, within the school system, as an integral part of its organized control, an agency properly equipped with trained investigators, to set forth to the supervisory and administrative officials of the school system, and the people of the city, those essential facts absolutely necessary for the intelligent development of schools and of public sentiment. Of these alternatives it would seem that the latter is to be greatly preferred. No outside agency could carry forward the work of inspection, of formulating impartial judgments of results, and of proposing new procedures without much friction and loss of energy.

(3) The problems of public education in New York City are not conventional problems. Many of the more pressing ones are new in the social and educational world. They cannot be solved by preconceptions, or the showing of hands. In so far as is possible, the situation and causes that have generated these problems must be weighed and analyzed before rational and permanent solutions can be found.

Recommendation IV

That the Board of Examiners be reorganized so as to provide for nine members, including the City Superintendent of Schools, ex officio; the service of the eight appointed members to be arranged so as to per-

¹ See pp. 320-21.

mit each member to devote every fourth year to supervisory, or other special duty in the school system.

The eight appointed members should be divided into four classes of two each. The members of each class should be relieved, in regular rotation, from their immediate duties as examiners, and devote one year to some assignment that would bring them into direct contact with schools and the teaching staff of New York City or with the schools of other localities and countries. Such a plan would mean that, during any year, there would be six active members of the board. We regard this recommendation by us as fundamental to the continued effectiveness of the Board of Examiners, for the following reasons:

(1) It would inhibit the well-recognized tendency of such examining bodies to become isolated from the situations under their control.

(2) It would permit the members of the board to study the needs of instruction to the end of bringing about more effective relationships between the formal examinations for licensing and the performances within the school.

(3) It would provide for a higher degree of specialization of effort on the part of the members of the board. The range and variety of examinations now necessary to be given to determine the special qualifications of teachers are large enough to tax the capacity of six examiners.

X

APPENDICES

- A. By-Laws Governing the Organization of Elementary Schools
- B. Salary Schedules: Supervisory Staff of Elementary Schools
- C. Form for Monthly Report of District Superintendents
- D. Minutes of the Board of Superintendents, January 19, 1911
- E. Minutes of the Board of Superintendents, October 26, 1911
- F. Examination Questions—License No. 1
- G. Forms for Approval of Service: Renewal of Temporary Licenses
- H. Forms for Approval of Service: Advance in Salary
- I. Forms for Rating Teaching Efficiency
- J. Form for Report upon Superior Merit

Appendix A

By-Laws Governing the Organization of Elementary Schools

Previous to January 1, 1912, the organization and supervision of elementary schools, as provided for by the by-laws of the Board of Education, were as follows.¹

ORGANIZATION OF ELEMENTARY SCHOOLS

"Sec. 51. 1. Each elementary school shall be divided into classes. A class shall be understood to mean the number of pupils, whether of like grade or not, placed under the care of one teacher."

"2. For purposes of organization and supervision, elementary schools shall be divided into the following orders:

First Order: Schools having forty-eight or more classes.

Second Order: Schools having from twenty-eight to forty-seven classes.

Third Order: Schools having from twelve to twenty-seven classes. (When necessary a group of small schools may be regarded as a school of the third order.)

Fourth Order: Schools having from six to eleven classes.

Fifth Order: School having less than six classes."

¹By-Laws of the Board of Education, 1911, pp. 65 ff.

"3. The number of classes in a school shall be determined by the Board of Superintendents. The number of teachers shall not exceed the number of classes except as determined in this section. Subject to the approval and direction of the Board of Superintendents, the principal shall assign teachers to class duty, unless increase or diminution of salary is involved in such assignment."

"4. All schools of the first, second, and third orders shall be placed under the administration of a principal (a person holding a principal's license), who shall not be required to teach a class, but this provision as to license shall not affect the status of persons appointed as principals prior to February 3, 1902, and now serving in such capacity."

"5. Each school of the fourth order (unless grouped, as provided in subdivision 2 of this section) shall be placed in the charge of a teacher, with the rank of assistant to principal, who may be required, at the discretion of the Board of Superintendents, to teach a class. Such teacher in charge shall hold an assistant to principal (head of department), or a higher license, and shall be regularly appointed for the district in which such school of the fourth order is situated, and shall be assigned to the charge of such school by the Board of Superintendents"

"6. Schools of the fifth order (unless grouped, as provided in subdivision 2 of this section) shall be in charge of a teacher assigned by the Board of Superintendents, who shall be designated the senior teacher."

"7. In schools of the first order, containing fifty-eight or more classes, two teachers in excess of the number of classes may be appointed, in schools of the first order containing less than fifty-eight classes, and in schools of the second and third orders, one teacher in excess of the number of classes may be appointed; such teachers shall teach classes in the absence of class teachers, and shall perform such clerical work as the principal may determine. A person holding a substitute license, or a higher license, but not eligible for appointment as a regular teacher, may be assigned by the Board of Superintendents as an additional teacher for a specified period, not to exceed one year. (As amended May 27, 1903; January 22, 1908; January 13, 1909; and November 24, 1909, to take effect January 1, 1910.)"

"8. In schools of the first order two assistants to the principal, and in schools of the second order one assistant to the principal, may be appointed, who shall perform such supervisory, teaching, and clerical work as the principal, subject to the approval of the Board of Superintendents, shall direct. In a school of over sixty-seven classes a third assistant to the principal may be appointed. Such assistant to the principal shall hold a head of department or a higher license."

"9. In schools of the third order, in which one principal has charge of an elementary school and a high school department, there may be one assistant to principal for the elementary school, if it has twelve or more classes."

- 10.
- 11.
- 12.
- 13.

Section 51 of the by-laws (subdivisions 2, 3, 4, 5, 6, 7, 8, and 9), as amended December 27, 1911, and January 10, 1912, became effective January 1, 1912.¹

"2. When necessary, a group of schools may be regarded as one school organization.

"3. The number of classes in a school shall be determined by the Board of Superintendents. The number of regular teachers, including the number of teachers of special branches who may be assigned to service exclusively in a given school, shall not exceed the number of classes, except as determined in this section. Subject to the approval and direction of the Board of Superintendents, the principal shall assign teachers to class duty, unless increase or diminution of salary is involved in such assignment.

"4. A school having eighteen or more classes, unless grouped with other schools, as provided in subdivision 2 of this section, shall be placed under the administration of a principal (a person holding a principal's license, or who was, prior to January 1, 1912, officially recognized as an elementary school principal), who shall not be required to teach a class.

"5. A school having from six to seventeen classes, in which there is any grade above the 6B, unless grouped with other schools, as provided in subdivision 2 of this section, shall be placed in charge of a head teacher, who shall be relieved from teaching a class, or of an assistant to principal (head of department), or a person holding a higher license. A school having from six to seventeen classes of grades below the 7A, unless grouped with other schools, as provided in subdivision 2 of this section, shall be placed in charge of an assistant to principal (head of department), or a person holding a higher license, who shall be designated as the teacher in charge, and who may be required, at the discretion of the Board of Superintendents, to teach a class.

"6. A school having fewer than six classes, unless grouped with other schools, as provided in subdivision 2 of this section, shall be placed in charge of a regular teacher, who shall be designated as the senior teacher. Whenever the number of classes in a school shall be increased above the limit named in this subdivision the assignment and designation of the person in charge of such school shall immediately terminate.

"7. To schools having twelve or more classes, one teacher in excess of the number of classes, such teacher to be known as an additional teacher, may be assigned; to school having fifty-eight or more classes two teachers in excess of the number of classes may be assigned; such addi-

¹ By-Laws of the Board of Education, 1911, pp. 65 ff.

tional teachers shall teach classes in the absence of class teachers, and shall perform such clerical work as the principal may require. A person holding a substitute license, or a higher elementary school license, may be assigned as such additional teacher. The assignment of all such additional teachers shall be for a specified period, not to exceed one year.

"8. In schools having twenty-eight or more classes one assistant to principal, and in schools having forty-eight or more classes two assistants to principal may be appointed, who shall perform such supervisory teaching, and clerical work as the principal shall direct, subject to the approval of the Board of Superintendents. (As amended January 10, 1912.)

"9. In schools having from twelve to twenty-seven classes, in which one principal has charge of an elementary school and a high school department, there may be one assistant to principal for the elementary school if it has twelve or more classes."

Appendix B

Salary Schedules: Supervisory Staff of Elementary Schools¹

OLD—PRIOR TO JANUARY 1, 1912

ELEMENTARY SCHOOLS—PRINCIPALS AND HEADS OF DEPARTMENTS

"8. Principals and branch principals of schools of not less than twelve (12) classes, including schools having high school departments, shall be paid in accordance with the following schedule:

SCHEDULE I

Year of Service.	(a) Women.	(b) Men.
First	\$1,750	\$2,750
Second	2,000	3,000
Third	2,250	3,250
Fourth	2,500	3,500

"The minimum salary for women shall be \$1,750; the maximum salary for women shall be \$2,500; the rate of annual increase shall be \$250. The minimum salary for men shall be \$2,750, the maximum salary for men shall be \$3,500; the rate of annual increase shall be \$250. No increase for any year, however, shall be made unless the service of the principal or branch principal shall have been approved, after inspection and investigation, as fit and meritorious by a majority of the board of superintendents."

"A principal of a school with a high school department, having supervision of not less than twenty-five teachers in the aggregate (elementary and high school), shall receive, in addition to the salary provided in

¹ By-laws of the Board of Education, 1911. pp. 113 ff.

Schedule I, the sum of \$500 per annum. Whenever, by reason of consolidation, or other cause, such school shall cease to be a school of the kind described in this paragraph, such additional salary shall cease. (This paragraph was adopted December 12, 1906, to take effect February 1, 1907.)

"9. Teachers in charge of schools of the fourth order—less than twelve (12) classes but not less than six (6) classes, and assistants to principals (heads of departments)—shall be paid in accordance with the following schedule:

SCHEDULE II

Year of Gross Service.	(a)	(b)
Ninth	\$1,400	\$2,100
Tenth	1,500	2,250
Eleventh	1,600	2,400

"The minimum salary for women shall be \$1,400; the maximum \$1,600; and the rate of annual increase \$100. The minimum salary for men shall be \$2,100; the maximum \$2,400; and the rate of annual increase \$150.

"No person shall be appointed under, or promoted to, Schedule II, or have a claim to salary therein, who has not had at least eight (8) years of experience as a class teacher.

"In an independent school of the fifth order (less than six (6) classes) a senior teacher, duly designated as such, if a female, shall receive, in addition to the regular salary, \$100 per annum while serving in such capacity."

(As amended May 27, 1903, and December 27, 1905.)

NEW

Under the schedules of teachers' salaries adopted by the Board of Education, pursuant to the provisions of Chapter 902 of the Law of 1911 (Equal Salary Law), the following apply to the supervisory staff of elementary schools.¹

"13. Principals of schools of eighteen (18) or more classes, including schools having high school departments, shall be paid in accordance with the following schedule:

SCHEDULE A

Year of Service.	
First	\$2,300
Second	2,540
Third	2,780
Fourth	3,020
Fifth	3,260
Sixth	3,500

(Schedule II, May 17, 1911.)

¹By-Laws of the Board of Education, 1911. Supplement pp. 8-10.

"Under this schedule the minimum salary shall be \$2,300; the maximum \$3,500; and the rate of annual increase \$240. No increase for any year, however, shall be made unless the service of the principal or branch principal shall have been approved, after inspection and investigation, as fit and meritorious by a majority of the board of superintendents.

"A principal of a school with a high school department, having supervision of not less than twenty-five teachers in the aggregate (elementary and high school), shall receive, in addition to the salary provided in Schedule A, the sum of \$500 per annum. Whenever, by reason of consolidation, or other cause, such school shall cease to be a school of the kind described in this paragraph, such additional salary shall cease.

"The principal of a probationary school shall be paid in accordance with Schedule A. (This paragraph was adopted December 27, 1911.)

"Schools having from six (6) to seventeen (17) classes in which there are grades above the 6B shall be placed in charge of a head teacher, who shall be relieved from teaching a class, or of an assistant to principal (head of department), or a person holding a higher license, and the person so placed in charge shall be paid in accordance with Schedule B3. (As amended December 27, 1911.)

"Schools having from six (6) to seventeen (17) classes, provided such schools have no grade above the 6B, shall be placed in charge of a person holding a license as assistant to principal (head of department), or a higher license, who shall be paid in accordance with Schedule B3.

"In an independent school of less than six (6) classes a senior teacher, duly designated as such, shall receive, in addition to the regular salary, compensation at the rate of \$100 per annum while serving in such capacity."

SCHEDULES B3 AND B4

Year of Service.	B3 Assistants to Principals (Heads of Departments).	B4 Head Teachers.
First .....	.....	.....
Second .....	.....	.....
Third .....	.....	.....
Fourth .....	.....	.....
Fifth .....	.....	.....
Sixth .....	.....	\$1,060
Seventh .....	.....	1,180
Eighth .....	.....	1,300
Ninth	\$2,100	1,420
Tenth	2,250	1,540
Eleventh	2,400	1,660
Twelfth .....	.....	1,780
Thirteenth .....	.....	1,900
Fourteenth .....	.....	2,020
Fifteenth .....	.....	2,140
Sixteenth .....	.....	2,260
Increment	\$150	\$120

[See Schedules I (a), I (b), I (c), and I (d), May 17, 1911.]

"Under Schedule B₃, the minimum salary shall be \$2,100 per annum; the maximum \$2,400; and the rate of annual increase \$150. No one shall be entitled to be paid under said schedule who has not been credited with eight years of experience in elementary schools.

"Under Schedule B₄ the minimum salary shall be \$1,000 per annum; the maximum \$2,260; and the rate of annual increase \$120. No one shall be entitled to be paid under said schedule who has not been credited with five years of experience in elementary schools.

"Assistants to principals (heads of departments) shall be appointed only to supervise grades below the 7A.

"Head teachers shall be appointed only for service in connection with the teaching of English, mathematics, history and civics, and geography and science in schools having not less than twelve classes in the seventh and eighth year grades, organized on the departmental plan."

Appendix C

Form for Monthly Report of District Superintendents

DEPARTMENT OF EDUCATION

THE CITY OF NEW YORK

School Districts

Borough of

DISTRICT SUPERINTENDENT'S DIRECTOR'S AND ASSISTANT DIRECTOR'S INSPECTOR'S	}	REPORT FOR THE MONTH ENDING.....191
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Schools visited for purposes of supervision
during the month.

Conferences with principals.
(Give time, place and subject of conferences.)

Conferences with teachers.
(Give time, place and subject of conferences.)

Duties performed on special assignment.

Absences from duty.
(Give dates of absence and duration of absence
in each case.)

Results accomplished by principals in
accordance with recommendations.

New recommendations.

Signed

{	District Superintendent.
{	Director of
{	Assistant Director of
{	Inspector of

Appendix D

Minutes of the Board of Superintendents,
DEPARTMENT OF EDUCATION, THE CITY OF NEW YORK

Thursday, January 19, 1911

A stated meeting of the Board of Superintendents was held at 2 o'clock P. M. at the Hall of the Board of Education.

Present—Mr. MAXWELL, Chairman, and Messrs. EDSON, HAAREN, MELENEY, O'BRIEN, SHALLOW, STEVENS, STRAUBENMULLER, and WALSH.

The Minutes of the meeting held on January 5th were approved.

COMMUNICATIONS

The CHAIRMAN presented the following:

1.¹ From the Secretary of the Board of Education, transmitting copies of certain reports which were adopted by that board at its meeting on the 11th inst.

Ordered to be noted in the Minutes and placed on file.

2. From Agatha Branigan, of Public School 43, Brooklyn, requesting the board to reconsider its action of October 6th last in disapproving her services for the seventh year.

Referred to Mr. MELENEY.

3. From Clara C. Schmitt, of Public School 170 Primary, Manhattan, requesting a leave of absence for one year from January 10th, for restoration of health.

4. From Jessie N. Goode, of Public School 102, Brooklyn, requesting a leave of absence from February 6th until June 1st, for purposes of study.

5. From the Secretary of the Teachers' College, Columbia University, writing at the request of E. A. Farnsworth, a teacher in Public School 12, Richmond, suggesting that her leave of absence be extended until June 1st, in order that she may complete the course of study for a special diploma in domestic science.

6. From Associate City Superintendent SHALLOW, with reference to a slight accident which occurred in the cooking room of Public School 168 Girls, Manhattan, and submitting a suggestion that wire gauze netting be placed in front of the cooking stoves and that a fire extinguisher be provided for each cooking room.

The foregoing communications were referred to the Committee on School Management.

¹ Each separate item has been numbered for convenience of reference (E. C. E.)

7. From the Secretary of the Board of Education, referring for report, by direction of the Committee on Elementary Schools, a communication from Max Aronson and other residents in the vicinity of Public School 29, Manhattan, requesting the establishment of an 8B class in that school, in order that their children may complete the elementary school course in that school and not be obliged to go to Public School 44, which is some distance from their homes.

Referred to Mr. STRAUBENMULLER.

8. From Imogene E. Hawes, of Public School 78, Manhattan, requesting that her leave of absence for restoration of health be terminated and that she be permitted to resume duty on February 1st.

Referred to Mr. EDSON.

9. From Kate A. Condon, principal of Public School 1, Brooklyn, requesting a change in the assignment of an additional teacher in that school.

Referred to the Committee on Nomination, Transfer, and Assignment.

10. From the Edison Manufacturing Company, offering at a special price their Underwriter Projector for producing moving pictures.

From The Laemmle Film Service, submitting a list of moving pictures for use in the public schools.

The foregoing communications were referred to the Committee on Course of Study.

11. From Anna L. Phillips, applying for the position of principal of the proposed new high school to be known as the Bay Ridge High School, Brooklyn.

Referred to the Committee on High Schools.

12. From Robert Jansen, stating that he and members of his family have seen groups of children waiting around two public schools between 8.15 and 8.30 o'clock in the morning, when the doors were closed, and suggesting that the doors be opened in order that the children may enter the schools when they arrive early.

Referred to the appropriate division superintendents for investigation as to the schools mentioned, and to the Committee on School Management to report if any additional amendments to the by-laws are necessary, or what steps should be taken to prevent these occurrences in other parts of the city.

REPORTS OF STANDING COMMITTEES

The Committee on High Schools submitted the following reports:

13. (1) Recommending the granting of leaves of absence without pay to certain teachers in high schools.

The resolution attached to this report was adopted.

14. (2) Relative to the accommodations in the Commercial High

School, and recommending the establishment of a commercial course of study for boys in the Bushwick High School, with the following resolution attached:

Resolved, That the Board of Superintendents recommends that pupils applying for admission to the Commercial High School of Brooklyn, who reside in the eastern part of that borough, may be admitted to the Bushwick High School, and that the commercial course which is now offered therein may be opened to boys.

Adopted.

15. (3) Recommending the transfer of certain high school teachers.

The principals of the high schools affected were notified to be present, in accordance with Section 1090 of the Charter.

The resolution attached to the report of the Committee was adopted.

16. (4) Recommending the nomination of certain persons for service in the high schools.

The principals of the high schools affected were notified to be present, in accordance with Section 1090 of the Charter.

This report was very carefully considered, and certain changes were decided upon.

The resolution attached to the report of the Committee, as changed, was adopted.

The Committee on Training Schools submitted the following reports:

17. (1) Recommending the nomination of a certain person for service in the Brooklyn Training School for Teachers.

The principal of this school was notified to be present, in accordance with Section 1090 of the Charter.

The resolution attached to this report was adopted.

18. (2) Recommending the denial of an application from a teacher in the Brooklyn Training School for Teachers to be excused with pay for certain absence in December last.

The resolution attached to this report was adopted.

19. (3) Recommending the excuse with pay of certain absences during December last of teachers in training schools for teachers.

The resolution attached to this report was adopted.

The Committee on Evening Schools submitted the following reports:

20. (1) Recommending the nomination of a certain person for service in an Evening High School.

The resolution attached to this report was adopted.

21. (2) Relative to the sessions of Evening School 88, Queens, with the following resolution attached:

Resolved, That, in accordance with Section 55, paragraph 3, of the by-laws of the Board of Education, the Committee on Spe-

cial Schools be, and it is hereby, requested to permit the sessions of Evening School 88, Queens, to be held on Tuesday, Wednesday, Thursday, and Friday evenings, omitting Monday evening, on account of a lecture which is given by the Department of Lectures on said evening, which would interfere with the proper conduct of the evening school.

Adopted.

22. (3) Recommending the designation of a certain teacher as registrar in an evening school, with the following resolution attached:

Resolved, That Joseph Busto be, and he is hereby, designated to act as registrar in Evening School 158, Brooklyn, for the season of 1910-1911.

Adopted.

23. The Committee on Compulsory Education submitted a report containing the following resolutions:

Resolved, That the service of Josephine Fernandes, attendance officer, be approved as fit and meritorious for the sixth year, to take effect January 1, 1911.

Resolved, That the service of David Wangrow, attendance officer, be approved as fit and meritorious for the first year, to take effect January 17, 1911.

Adopted.

The Committee on Vacation Schools, and Playgrounds and Recreation Centers submitted the following reports:

24. (1) Recommending the nomination of certain persons for service in Evening Recreation Centers, to fill vacancies caused by resignations.

The resolution attached to this report was adopted.

25. (2) Recommending the establishment of a license for teachers of singing in recreation centers, with the following resolution attached:

Resolved, That the Board of Superintendents hereby recommends to the Board of Examiners that a license be granted, to be known as "Teacher of Singing," in the recreation centers.

Adopted.

Mr. HAAREN requested to be recorded as voting in the negative upon the foregoing resolution.

26. (3) Recommending an amendment to the by-laws to provide for the opening of school playgrounds from 3.30 to 6 o'clock P. M., and compensation for teachers who serve in them.

Referred to the Committee on School Management.

27. (4) Recommending the nomination of a teacher of swimming. The resolution attached to this report was adopted.

The Committee on Vocational Schools and Classes for Defectives submitted the following reports:

28. (1) Relative to the admission of certain children to the East Side Free School for Crippled Children, which is an annex to Public School 2, Manhattan, and suggesting that the Committee on Elementary Schools be asked to render a decision in the matter.

Laid over.

29. (2) Relative to the assignment of certain persons to service in the Manhattan Trade School for Girls, with the following resolution attached:

Resolved, That the action of the Acting Principal of the Manhattan Trade School for Girls in assigning Viola Coen and Nellie G. Newman as substitute teacher clerks be, and it hereby is, approved.

Adopted.

The Committee on School Management submitted the following reports:

30. (1) Recommending the granting of a leave of absence without pay to a teacher of physical training.

Referred again to the Committee.

31. (2) Recommending the disapproval of the action of Local School Boards in approving applications from certain teachers in elementary schools to be excused with pay for certain absences during 1910.

The resolution attached to this report was adopted.

32. (3) Recommending the excuse with pay of certain absences during 1910 of teachers in the elementary schools.

The resolution attached to this report was adopted.

33. (4) Recommending the excuse with pay of certain absences during the current year of teachers in elementary schools.

The resolution attached to this report was adopted.

34. (5) Recommending the granting of leaves of absence without pay to certain teachers in elementary schools.

The resolution attached to this report was adopted.

35. (6) Recommending certain amendments to the by-laws, with the following resolutions attached:

Resolved, That the Board of Superintendents recommends to the Board of Education the repeal of Section 94a of the by-laws.

Resolved, That Subdivision 1 of Section 66 be amended by striking therefrom in the list of vocational or trade school licenses the line reading: "Teacher of non-vocational subjects."

Adopted.

36. The Committee on School Management presented reports from the division superintendents upon the services of certain teachers in the public schools, pursuant to the provisions of Section 1091 of the Charter.

After some consideration the services of the following-named teachers were declared fit and meritorious for the years indicated:

BOROUGH OF MANHATTAN

SCHOOL	NAME	YEAR
30	I. Irving Barnett	7th
30	Eugenia L. Loos	12th
150	Loretta I. Tartt	12th
10 P.	Carolyn E. Field	12th
BOROUGH OF QUEENS		
2	Cara Carson	12th
4	Helen M. Hoffman	12th
7	Ellen I. Santry	7th
17	William C. Mayer	7th
78	Cora A. Hare	7th
20	Eliakim R. Pierce	7th
27	Grace L. Hulse	7th
49	Elsie M. Thorne	12th
50	Leonore Pedley	12th
German	Hugo Felsner	4th
BOROUGH OF RICHMOND		
15	Mary Harrigan	12th
18	Lucy S. Seaman	7th
20	William Halloran	7th
German	Nathan Wolf	1st
13	Etta G. Connolly	7th

The services of the following-named teachers were disapproved:

BOROUGH OF MANHATTAN

SCHOOL	NAME	YEAR
150	Catherine T. M. Corrigan	12th
183	Bella Cohn	7th
BOROUGH OF BROOKLYN		
10	Charles H. Carroll	7th
BOROUGH OF RICHMOND		
5	Esther Smith	7th

The case of Margaret M. Walsh, of Public School 70, Manhattan, was referred to Mr. SHALLOW for special report.

37. The Committee on Nomination, Transfer, and Assignment submitted the following reports:

(1) Recommending the transfer of certain elementary school teachers.

The principals and district superintendents were notified to be present, in accordance with Section 1090 of the Charter.

38. Miss Ella A. Froeligh, assistant to principal in Public School 3, Manhattan, appeared before the board and protested against her transfer from that school, giving her reasons therefor.

William E. Grady, principal of Public School 64, Manhattan, was present and was heard with reference to the proposed transfer of an assistant to principal to his school.

After some discussion it was decided to strike the name of Ella A. Froeligh from the report.

39. Peter C. Ritchie, assistant to principal in Public School 3, Manhattan, appeared before the board and requested that he be not transferred from that school.

Michael E. Devlin, principal of Public School 8, Manhattan, was present, and was heard with reference to the proposed exchange of Ambrose Cort for Peter C. Ritchie.

The report was very carefully considered, and certain changes were decided upon.

The resolution attached to the report, as changed, was then adopted.

40. (2) Recommending the nomination of certain persons as teachers in the elementary schools.

The principals and district superintendents were notified to be present, in accordance with Section 1090 of the Charter.

The resolution attached to this report was adopted.

41. (3) Recommending the transfer of certain elementary school principals.

John H. Grotecloss, Jr., principal of Public School 11, Manhattan, was present and was heard with reference to his proposed transfer to the principalship of Public School 26, Manhattan.

The resolution attached to the report of the committee was adopted.

42. (4) Recommending the nomination of a certain person as principal of an elementary school.

The resolutions attached to this report were adopted.

43. (5) Recommending the transfer of Sidney M. Fuerst from Public School 55, Brooklyn, to the principalship of Public School 2 Boys, Manhattan.

Mr. HAAREN raised the point of order that this proposed transfer does not properly come before the board, and that, if Mr. Fuerst is a principal in excess in Public School 55, Brooklyn, he should be assigned to another school by the City Superintendent of Schools.

The CHAIRMAN ruled that this point of order was not well taken.

The resolution attached to the report of the committee was then adopted.

44. (6) Recommending the nomination of certain persons as teachers of shop work in the elementary schools.

The resolutions attached to this report were adopted.

45. (7) Recommending the nomination of certain persons as assistants to principals in elementary schools.

The principals and district superintendents were notified to be present, in accordance with Section 1090 of the Charter.

The resolution attached to this report was adopted.

46. (8) Recommending the granting of the request of a certain Schedule IV teacher to be assigned to duty in Schedule III.

The resolution attached to this report was adopted.

47. (9) Recommending that a certain teacher now serving in Schedule III be restored to duty in Schedule IV.

The resolution attached to this report was adopted.

48. (10) Recommending the transfer of a certain Schedule IV teacher to the rank and pay of Schedule III.

The resolution attached to this report was adopted.

REPORTS OF SUPERINTENDENTS ON MATTERS REFERRED

49. Mr. MELENEY, to whom was referred, on December 1st, the communication from the principal of Public School 24, Brooklyn, requesting permission to change the hours of session of the afternoon kindergarten class in that school, submitted the following:

Resolved, That the principals of the following schools in Brooklyn be permitted to begin the sessions of the afternoon kindergartens at 12.30 and close the same at 3 o'clock:

Public Schools 24 and 31.

Adopted.

50. Mr. SHALLOW, who was requested, on January 5th, to investigate and report upon the services of Katherine Ryan, of Public School 122, Manhattan, submitted a report in regard to the matter, and recommended the approval of Miss Ryan's services.

It was regularly moved and adopted that the services of Katherine Ryan, of Public School 122, Manhattan, be approved as fit and meritorious for the 7th year.

51. Mr. EDSON, to whom was referred, at this meeting, the request of Imogene E. Hawes to have her leave of absence terminated, submitted a report containing the following resolution:

Resolved, That the leave of absence, without pay, granted to Imogene E. Hawes, of P. S. 78, Manhattan, from October 1, 1910, to March 31, 1911, be, and the same is hereby, terminated on January 31, 1911.

Adopted.

NEW BUSINESS

Mr. EDSON offered the following:

52. (1) *Resolved*, That the principals of the following schools be, and they hereby are, authorized to change the number of classes in their schools, as indicated below:

BOROUGH OF THE BRONX

P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	CLASSES DISCONTINUED
	FROM	TO		
12	23	24	1 1A-6B	.....
37	51	51	4 E	4 1A-6B

Adopted.

53. (2) A report recommending the reassignment of certain teachers in Public School 43 Primary, Manhattan.

Approved.

54. Mr. SHALLOW submitted a report recommending the reassignment of certain teachers in Public Schools 74 Primary, 121, and 135, Manhattan.

Approved.

55. Mr. SHALLOW presented a communication from District Superintendent Jameson with reference to the services of Mabel L. Hooper, of Public School 168 Primary, Manhattan.

Mr. SHALLOW moved that the board reconsider its action of November 3d in disapproving without prejudice the services of Mabel L. Hooper, of Public School 168 Primary, Manhattan, for the 7th year.

This motion was duly seconded and adopted.

Mr. WALSH moved that the services of Mabel L. Hooper, of Public School 168 Primary, Manhattan, be approved as fit and meritorious for the seventh year, as of November 3, 1910.

This motion was duly seconded and adopted.

56. Mr. WALSH submitted a report recommending the reassignment of a teacher in Public School 158, Brooklyn.

Approved.

57. Mr. STRAUBENMULLER offered the following:

Resolved, That the principals of the following schools, and they hereby are, authorized to change the number of classes in their schools as indicated below:

Adopted.

BOROUGH OF MANHATTAN

P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	CLASSES DISCONTINUED
	FROM	TO		
31	54	52	.....	1 1A, 1 5A
88	43	40	.....	3 1A
160	50	49	.....	1 1A-6B
114	61	61	1 3A	1 8A

58. Mr. MELENEY offered the following:

(1) *Resolved*, That the principals of the following schools be, and they hereby are, authorized to change the number of classes in their schools, as indicated below:

BOROUGH OF BROOKLYN

P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	CLASSES DISCONTINUED
	FROM	TO		
15	32	34	1 3B, 1 7A-8A	.....
68	25	25	2 E	2 1A-6B
155	49	50	1 5B	.....

Adopted.

59. (2) A report recommending the reassignment of certain teachers in Public Schools 8, 20, 24, 51, and 68, Brooklyn.

Approved.

60 (3) A report recommending the discontinuance of the study of German in the 8A grade in Public School 43, Brooklyn, with the following resolution attached:

Resolved, That in Public School 43, Brooklyn, the teaching of German in the 8A grade be discontinued, and the time usually devoted to that subject be assigned to geography and English.

Adopted.

The board adjourned at 6.20 o'clock P. M., to meet on Thursday, January 26th, at 2 o'clock P. M.

THOMAS E. BUSSEY,
Secretary.

Appendix E

Minutes of the Board of Superintendents,

DEPARTMENT OF EDUCATION, THE CITY OF NEW YORK

Thursday, October 26, 1911

A stated meeting of the Board of Superintendents was held at 2 o'clock P. M. at the hall of the Board of Education.

Present—Mr. MAXWELL, Chairman, and Messrs. EDSON, HAAREN, O'BRIEN, SHALLOW, STRAUBENMULLER and WALSH.

Absent—Messrs. MELENEY and STEVENS, on special duty.

Consideration of the Minutes of October 13th was deferred.

COMMUNICATIONS

The CHAIRMAN presented the following:

1.¹ From the following teachers, requesting leaves of absence without pay:

Timothy J. Dugan, of Public School 109, Manhattan, from November 1, 1911, to August 31, 1912, for purposes of study.

¹Numbers added for convenience of reference (E. C. E.).

Thomas J. Whalen, of Public School 6 Boys, Manhattan, for one year, for restoration of health.

Jennie M. Dietz, of Public School 172, Manhattan, for one year from November 1, for restoration of health.

Frances Broadfoot, of Public School 38, Bronx, from October 15, 1911, to October 15, 1912, for restoration of health.

Mary L. Connolly, of Public School 23, Manhattan, until January 1, for restoration of health.

2. From the CHAIRMAN, submitting a draft of a proposed amendment to Section 74 of the by-laws, relative to teachers of special subjects in the School for the Deaf, which amendment has been approved by the Board of Examiners.

The foregoing communications were referred to the Committee on School Management.

3. From the Secretary of the Board of Education, giving notice, by direction of the Committee on Buildings, that four additional class rooms in Public School 28, Brooklyn, are ready for use.

Referred to Mr. WALSH.

4. From the Secretary of the Board of Education, with reference to a request made upon the Committee on Buildings for additional closet space for the use of the Evening School in Public School 29, Manhattan.

Referred to the Committee on Evening Schools.

5. From Thomas O. Baker, principal of Public School 44, Brooklyn, requesting that the teacher of cooking assigned to that school be not transferred to another school.

Referred to the Committee on Nomination, Transfer, and Assignment.

REPORTS OF STANDING COMMITTEES

The Committee on High Schools submitted the following reports:

6. (1) Recommending the granting of a leave of absence without pay to a certain high school teacher.

The resolution attached to this report was adopted.

7. (2) Recommending the addition of certain items to the list of supplies for use in high schools, with the following resolution attached:

Resolved, That the Board of Superintendents recommends the addition of the following to the Supply List for High Schools:

Holzel, Wandbilder; Farbendruck, Serie I, II, IV, 11 Blätter zu 140:93 cm. und ein Doppelblatt (No. 16) auf Leinwand mit Staben . . . M7.25 (No. 16 . . . M11.25). 1. Frühling, 2. Sommer, 3. Herbst, 4. Winter, 5. Inneres eines Bauernhofes, 6. Das Gebirge, 7. Der Wald, 8. Die Grossestadt, 13. Wohnung, 14. Der Hafen, 15. Der Hausbau, 16. Das Bergund Huterwerk.

Cartes Murales Vidal-La Blache

France. 2. Cours d'Eaux, 3. Relief du Sol, 4. Departements, 5. Villes, 6. Canaux, 7. Chemins de Fer, 8. Agriculture, 9. Province, 10. Frontiere du Nord-ouest, . . . (Im. 20: 1m.)

Armand Colin-Jenkins

Perrot et Fau

cj *Histoires* en images sans paroles en tableaux muraux, 25½ x 20 in., in colors. Stout Cardboard. . . . Vol. du Commentaire a L' usage du Prof.

Hachette . . . Brentano

Vietor; Systematic Table of French Sounds, 30x38½ in.

Also a handy table in reduced size to paste in pupils' books 2s.

Hachette . . . Brentano

Vietor, Lauttafeln

Deutsch und Franzosisch, 3 farbig . . . 100:130 cm.
auf Leinen mit Staben . . . M.4,00.

Elwert, Marburg . . . Stechert, N. Y.

PLANS AND PICTURES OF PLACES

Gebhardt, Plan von Berlin, 170:130 cm. . . . M 11,
25 Koehler, Leipzig . . . Brentano, Stechert.

Holzel, Paris, Serie III, No. 9. 140:93 cm. Leinwand mit
Staben . . . M8, 20. Stechert.

Holzel, Berlin, Serie V, No. 17. 140:03 cm. Leinwand mit
Staben . . . M8, 20.

Images Géographiques de la France

22 tableaux muraux (Im. 06 X Om, 75) en couleurs P. P.
Foncin . . . Delagrave, Paris. Jenkins, N. Y. Le Mont
Blanc, glacier des Alpes (good for German also).

Holzel, Geographical Pictures

The Rhine, etc. Hachette . . . Jenkins.

Soule or Perry: Pictures of

Cologne Cathedral
Strasburg Cathedral
Heidelberg Schloss
Rhine Castles

Soule or Perry: Pictures of

Louvre
Tuileries
Pantheon
Notre Dame de Paris
Tour Eiffel et Trocadero
Sacre Coeur
Boulevards

Soule or Perry: Pictures of (Continued)

Bourse
 Opera
 Hotel de Ville
 Cathedrals of
 Rouen
 Tours
 Amiens
 Rheims
 Versailles
 El Escorial
 Alhambra
 Palace of Madrid

MAPS OF COUNTRIES

Kiepert's France. Rand, McNally & Co.
 Kiepert's Germany. Rand, McNally & Co.
 Kiepert's Switzerland. Rand, McNally & Co.
 Kiepert's Spain. Rand, McNally & Co.
 Adopted.

8. (3) Recommending the approval of the assignments of certain persons to take charge of the annex of the Bushwick High School located in Public School 69, Brooklyn, in the absence of the principal.

The resolution attached to this report was adopted.

9. The Committee on Training Schools submitted a report recommending the approval of the assignments of certain pupil teachers in the Brooklyn Training School for Teachers to substitute duty in the public schools.

The resolution attached to this report was adopted.

The Committee on Nomination, Transfer, and Assignment submitted the following reports:

10. (1) Recommending the reassignment of a certain teacher of French, with the following resolution attached:

Resolved, That the Board of Superintendents hereby reassigns the following-named teacher of French, as indicated below:

NAME	PRESENT ASSIGNMENT DISTRICTS	PROPOSED ASSIGNMENT DISTRICTS
Julie Terpant	13, 14	14, 17

Adopted.

11. (2) Recommending the assignment of a certain teacher of cooking, with the following resolution attached:

Resolved, That the Board of Superintendents hereby assigns to duty the following-named teacher of cooking, as indicated below:

NAME
Mary E. Tripp

DISTRICTS
43, 44

Adopted.

12. (3) Recommending the termination of the assignments of certain substitutes as additional teachers, with the following resolution attached:

Resolved, That the assignments of the following-named substitutes as additional teachers be, and they hereby are, terminated from the dates given:

NAME	DISTRICT	SCHOOL	DATE
Helen I. Williams	21	39 P.	October 16, 1911
Frances F. Joseph	25	2	November 1, 1911

Adopted.

13. (4) Recommending the assignment of certain substitutes as additional teachers, with the following resolution attached:

Resolved, That the following-named substitutes be, and they hereby are, assigned as additional teachers, as indicated below, to take effect on the dates given, and to continue during satisfactory service, but not beyond January 31, 1911; subject, however, to cancellation by this board prior to that date:

NAME	DISTRICT	SCHOOL	DATE
Natalie Waldstein	20	159	October 20, 1911
Marie N. Sheridan	25	2	November 1, 1911
Philip V. Van Arsdale	26	32	October 23, 1911
Grace A. Hatfield	39	144	October 19, 1911

Adopted.

14. (5) Relative to the request for the assignment of a substitute teacher of physical training to the office of the assistant director of physical training in Brooklyn.

Referred to Mr. WALSH to investigate as to the necessity for this assignment.

The Committee on Evening Schools submitted the following reports:

15. (1) Recommending the nomination of certain persons for service in Evening Elementary Schools.

The resolution attached to each of these reports was adopted.

16. (2) Recommending the nomination of certain persons for service in Evening High Schools.

The resolution attached to each of these reports was adopted.

17. (3) Recommending the authorization of additional classes in Evening Elementary Schools.

The resolution attached to each of these reports was adopted.

18. (4) Recommending the authorization of additional classes in the East Side and the Morris Evening High Schools.

The resolution attached to this report was adopted.

19. (5) Recommending the authorization of the nomination of a general assistant for service in Evening School 145, Brooklyn.

The resolution attached to this report was adopted.

20. (6) Recommending a change in the hours of session of an Evening Elementary School, with the following resolution attached:

Resolved, That the Committee on Special Schools be, and it is hereby, requested to permit Evening School 158, Brooklyn, to begin its sessions at 7.45 P. M. and to close at 9.45 P. M.

Adopted.

21. The Committee on Compulsory Education submitted a report upon the services of a certain attendance officer, with the following resolution attached:

Resolved, That the service of Edward J. McManus, attendance officer, be approved for the sixth year, to take effect October 26, 1911.

Adopted.

22. The Committee on Course of Study submitted a form of letter explaining the ratings appearing on pupils' report cards, and recommended that 100,000 copies of this letter be printed and distributed to certain parents.

This matter was very carefully considered and the recommendation of the Committee was disapproved.

23. The Committee on School Management submitted reports of Division Superintendent Haaren upon the services of certain teachers in the public schools, pursuant to the provisions of Section 1091 of the Charter.

The following resolutions were adopted:

(a) *Resolved*, That the Board of Superintendents hereby disapproves, without prejudice, the services of the teacher whose name is given below, for the year indicated:

SCHOOL	BOROUGH OF RICHMOND NAME	YEAR
16	Ida M. Eglinton	7th

(b) *Resolved*, That the Board of Superintendents hereby approves the services of the teachers whose names are given below as fit and meritorious, for the years indicated:

BOROUGH OF QUEENS

SCHOOL	NAME	YEAR
4	Josephine Potter	12th
83	Clara A. Dreyfoos	7th
83	Cornelia J. Heyse	12th
86	Maude B. Van Keuren	7th
11	Grace Bellinger	7th
11	Laura D. Vores	12th
84	Cornelia E. Gayler	12th
34	Grace L. Clark	12th
49	William L. Swayer	7th
79	Emily A. Nelson	7th
39	Daisy E. Wikoff	7th
56	Angela G. Grady	12th
57	Henrietta Bergen	7th
75	Jennie L. Potter	1st
90	William E. Hendrie	7th

The Committee on School Management submitted the following reports:

24. (1) Recommending the denial of an application from a certain teacher for a leave of absence without pay.

The resolution attached to this report was adopted.

25. (2) Recommending the excuse with pay of certain absences during the current year of teachers in elementary schools.

The resolution attached to each of these reports was adopted.

26. (3) Recommending the disapproval of the action of certain Local School Boards in approving applications from teachers to be excused with pay for certain absences.

The resolution attached to this report was adopted.

27. (4) Recommending the granting of leaves of absence without pay to certain teachers.

This report was carefully considered.

Mr. WALSH moved that the report be divided and that the leaves of absence for restoration of health, as indicated in the report, be granted.

This motion was duly seconded and adopted.

Mr. WALSH moved that the applications for leaves of absence for purposes of study be referred again to the Committee.

This motion was duly seconded and adopted.

28. (5) Relative to the suggestions of the Association of Women Principals with reference to "Teachers' Visiting Days" and "Teachers' Visits to Home."

After some discussion it was decided to lay this report over for further consideration at a subsequent meeting.

29. The Committee on Vacation Schools and Playgrounds and Recreation Centers submitted a report recommending the nomination of certain persons for service in Evening Recreation Centers.

The resolution attached to this report was adopted.

NEW BUSINESS

Mr. STRAUBENMULLER submitted the following reports:

30. (1) Recommending the resumption of the evening sessions in Public School 120, Manhattan, with the following resolutions attached:

Resolved, That the Board of Education be requested to approve the recommendation of the Board of Superintendents that two evening school sessions be held each week in Public School 120, Borough of Manhattan, beginning on Thursday, November 9, 1911, said sessions to begin at 8 P. M. and to end at 10 P. M., on the evenings of Monday and Thursday of each week; and that said sessions shall be in charge of a person holding the license of an 8B teacher, or a higher license, or license as principal of a recreation center.

Resolved, That four teachers be assigned to teach in such evening sessions.

Resolved, That the principal of Public School 120, Borough of Manhattan, Olive M. Jones, be authorized to hold one other evening session in each week, the holding of such extra session to be optional with Miss Jones, and such session to be under her general care and direction; no remuneration to be given to Miss Jones or any of her assistants in connection therewith.

Resolved, That the Committee on Care of Buildings be requested to provide janitor service for Public School 120, Borough of Manhattan, during the evening sessions.

Resolved, That the evening sessions in Public School 120, Borough of Manhattan, continue until such date as the Board of Superintendents may determine.

Adopted.

31. (2) Recommending the designation of certain persons for service in the evening sessions in Public School 120, Manhattan, with the following resolutions attached:

Resolved, That the Board of Education be requested to approve the recommendation of the Board of Superintendents that Robert B. Brodies be designated to take charge of the evening sessions of Public School 120, Borough of Manhattan, and that he be paid \$5.00 for each evening of actual service, to take effect November 9, 1911.

Resolved, That the Board of Education be requested to approve the recommendation of the Board of Superintendents that the following teachers be assigned to assist in the evening sessions of Public School 120, Borough of Manhattan, to give instruction

in the subjects indicated after their respective names, and that said teachers be paid at the rate provided for teachers in the evening elementary schools (\$3,000), to take effect November 9, 1911:

NAME	SUBJECT
A. Benjamin Martin	Shopwork
Patrick H. Gallagher	Physical training, including games, athletics, apparatus work, etc.
Jacob Holman	
William Jansen	

Adopted.

32. (3) Recommending the reassignment of certain teachers in Public Schools 2 Primary and 110, Manhattan.

Approved.

33. (4) Recommending changes in the number of classes in certain schools, with the following resolution attached:

Resolved, That the principals of the following schools be, and hereby are, authorized to change the number of classes in their schools, as indicated below:

BOROUGH OF MANHATTAN

P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	CLASSES DISCONTINUED
	FROM	TO		
2 P.	40	41	1 C	.....
42	51	52	1 1A	.....
113	22	22	1 E	13B

It was regularly moved and adopted that the foregoing resolution be amended by striking therefrom the line relating to Public School 2 Primary.

The CHAIRMAN put the question upon the resolution as amended and it was decided in the affirmative.

34. The CHAIRMAN called attention to the large number of pupils on part time in Public School 144, Brooklyn, and to the number of vacant sittings in Public School 167, Brooklyn, and suggested three plans for reducing this part time.

District Superintendent Lyon was present and was heard with reference to the plans proposed by the CHAIRMAN, and also suggested other means for reducing this part time.

The matter was referred to Mr. WALSH for report at next meeting.

Mr. O'BRIEN offered the following:

35. (1) *Resolved*, That the principal of Public School 69, Manhattan, be, and he hereby is, directed to discontinue one 4B class, thereby reducing the total number of classes in that school to thirty-eight.

Adopted.

36. (2) *Resolved*. That the application to establish a fourth kindergarten class in Public School 17, Manhattan, be, and hereby is, denied.

Adopted.

Mr. WALSH offered the following:

37. (1) *Resolved*. That the principals of the following schools be, and they hereby are, authorized to change the number of classes in their schools as indicated below:

BOROUGH OF BROOKLYN

P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	CLASSES DISCONTINUED
	FROM	TO		
102	36	38	1 D, 1 E	.....
124	24	24	1 ungraded	1 1A-6B

P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	CLASSES DISCONTINUED
	FROM	TO		
144	66	65	.....	1 1A-6B
160	29	30	1 1A-6B	.....
167	46	51	3 1A-6B, 2 kdgn.	.....

Adopted.

38. (2) *Whereas*, The authorities of the Hebrew Orphan Asylum are willing to supply two rooms for the instruction of some of their children now attending Public School 144, Brooklyn,

Resolved, That the Committee on Buildings be requested to supply for each room a teacher's desk, a bookcloset and blackboards.

Adopted.

39. (3) *Resolved*, That the principal of Public School 153, Brooklyn, be permitted to change the rating of Anna V. Curtis from "C" to "B."

Adopted.

40. (4) *Whereas*, There are now two teachers of cooking in excess in Districts 2 and 3, and one teacher in excess in Districts 6 and 7,

Resolved, That the Committee on Nomination, Transfer, and Assignment be empowered to make the necessary transfers to any existing vacancies.

Adopted.

Mr. STRAUBENMULLER requested to be recorded as voting in the negative upon the foregoing resolution.

Mr. SHALLOW submitted the following reports:

41. (1) Recommending the removal of certain fences between the

yards of Public School 49, Manhattan, etc., with the following resolution attached:

Resolved, That the Board of Superintendents recommends to the Committee on Buildings that the wooden fences dividing the boys' yard from what was formerly a girls' yard, on the East 38th street side of Public School 49, Manhattan, be removed so as to make one large yard for the boys, and that four settees on the west side of the platform of the Assembly Room on the fourth floor of Public School 49, Manhattan, be removed.
Adopted.

42. (2) Recommending changes in the number of classes in certain schools, with the following resolution attached:

Resolved, That the principals of the following schools, be and they hereby are, authorized to change the number of classes in their schools, as indicated below:

BOROUGH OF MANHATTAN				
P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	CLASSES DISCONTINUED
	FROM	TO		
18	43	42	.....	1 4A
49	39	37	.....	1 1B, 1 6A
109	65	66	1 1A	.....

Adopted.

43. (3) Recommending the equipment of certain rooms in Public School 59, Manhattan, as offices for the principal and her assistants, with the following resolution attached:

Resolved, That the Committee on Buildings of the Board of Education be notified that the Board of Superintendents approves of the fitting up of two unused class rooms in Public School 59, Manhattan, as offices for the principal and her assistant, and that the small offices heretofore in use be fitted up for use as teachers' rooms.

Adopted.

44. (4) Recommending the reassignment of a teacher in Public School 59, Manhattan.

Approved.

Mr. HAAREN offered the following:

45. (1) *Resolved*, That the principals of the following schools be, and they hereby are, authorized to change the number of classes in their Schools, as indicated below:

EDUCATIONAL INVESTIGATION

BOROUGH OF QUEENS

P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	CLASSES DISCONTINUED
	FROM	TO		
34	10	11	1 1A-1B	.....
45	14	15	1 1A-6B	.....
58	32	36	4 1A-6B	.....
59	35	33	.....	2 kdgn.
64	11	9	2 kdgn.	4 1A-6B
66	13	14	1 kdgn.	.....

Adopted.

46. (2) *Resolved*, That the Committee on By-Laws and Legislation be requested to render an opinion as to the right of the Board of Superintendents to continue in service as teacher-in-charge of Public School 37, Borough of Queens, Catherine M. Sheehan, when the school has 12 classes, and when such teacher-in-charge thereby becomes entitled to the rank and pay of a principal.

Adopted.

Mr. EDSON submitted, on behalf of Mr. MELENEY, a report containing the following resolution:

47. *Resolved*, That the principal of Public School 147 Girls, Brooklyn, be, and she hereby is, authorized to establish one additional special grade E class, thereby increasing the total number of classes in that school to fifty-seven.

Adopted.

Mr. EDSON offered the following:

48. (1) *Resolved*, That the principals of the following schools be, and they hereby are, authorized to increase the number of classes in their schools, as indicated below:

BOROUGH OF MANHATTAN				
P. S.	NUMBER OF CLASSES CHANGED		ADDITIONAL CLASSES	
	FROM	TO		
52	10	11	1 1B	
BOROUGH OF THE BRONX				
4	64	65	1 1A	
23	71	72	1 1A	
29	49	50	1 1A	

Adopted.

49. (2) A report recommending the following apportionment of rooms in the new building (Public School 102) to be erected on the site on 113th street, east of Second avenue, Manhattan:

- 1 room for kindergarten boys and girls.
- 14 rooms for boys and girls of the 1st and 2d years.
- 12 rooms for boys and girls of the 3d and 4th years.

10 rooms for boys and girls of the 5th and 6th years.

1 room for an ungraded class.

1 room for an anæmic class.

Auditorium on the ground floor; gymnasium (2 units); bath; playground; roof playground.

Approved.

50. Mr. STRAUBENMULLER moved the nomination of Albert W. Garritt as Assistant Director of Shopwork.

It was regularly moved and adopted that the motion offered by Mr. STRAUBENMULLER be referred to the Committee on Nomination, Transfer and Assignment.

The Board adjourned at 5.50 o'clock P. M., to meet on Thursday, November 2d, at 2 o'clock P. M.

THOMAS E. BUSSEY,
Secretary.

Appendix F

Examination Questions—License No. 1

EXAMINATION FOR LICENSE NO. 1

JANUARY, 1910

HISTORY AND PRINCIPLES OF EDUCATION

Time, Two hours.

Candidate's No.

1. (a) Name five habitual motor-reactions which children should acquire in school. (5)
- (b) With reference to penmanship, show how a teacher may properly inculcate a habit. (5)
2. (a) Name five practices or procedures on the part of teachers which commonly lead to inattention. (5)
- (b) Show how interest promotes attention, and how attention conduces to interest. Illustrate. (6)
3. Explain and illustrate a teacher's use of the following principles in the subject, or subjects, indicated:
 - (a) Visualization—Spelling.
 - (b) Apperception—Drainage of New York State.
 - (c) Generalization—Forming the plural of nouns. (9)

4. Explain and exemplify two of the following terms as employed in logic:
 - (a) Inference.
 - (b) Syllogism.
 - (c) Method of agreement. (10)
5. State the main subjects of study in the case of two of the following:
 - (a) The schools for the Athenian youth.
 - (b) Monastic schools.
 - (c) Schools of the Jesuits.
 - (d) Eton or Rugby.
6. Outline Spencer's discussion (a) as to what knowledge is of most worth; or (b) as to proper modes of punishment. (10)

EXAMINATION FOR LICENSE NO. I

JANUARY, 1910

METHODS OF TEACHING

Time, Two hours.

Candidate's No.

1. (a) What is meant by a unit of measure? (3)
(b) State and solve a problem in which the number 3 may be used as a unit. (8)
2. Show by the aid of lettered diagrams that multiplier and multiplicand (when neither is concrete) can be interchanged without altering the product. (10)
3. (a) Explain, as to a class, "borrowing" in subtraction. (8)
(b) Find the difference between 178 and 342 by the Austrian method, and explain briefly each step of the process. (8)
4. State a practical problem (a) in discount, (b) in commission, (c) in percentage (to find what per cent. one number is of another). (9)
5. Choosing any decisive battle, describe a proper method of treating it as a topic in history. (12)
6. Show how to lead children to interpret contour lines on a map. Illustrate with a diagram. (8)
7. Specify the topics which should in general be comprised in the study (a) of a river; (b) of a city. (12)
8. Give the topics to be covered in a lesson (for pupils about 13 years old) on the structure and functions of the skin. (12)

EXAMINATION FOR LICENSE NO. I

JANUARY, 1911

HISTORY AND PRINCIPLES OF EDUCATION

Time, Two hours.

Candidate's No.

1. "All nervous centers have then, in the first instance, one essential function, that of 'intelligent' action. . . . Like all other organs, however, they evolve, . . . the lower centers passing downward into more unhesitating automatism, and the higher ones upward into larger intellectuality."—James.
 - (a) Define and illustrate the meaning of nervous centers, lower centers, higher centers. (6)
 - (b) Illustrate "the lower centers passing downward into more unhesitating automatism." (2)
 - (c) Illustrate "the higher ones (passing) upward into larger intellectuality." (2)
2. Explain the following, and illustrate them from probable class room experience:
 - (a) Impulse;
 - (b) Association of ideas;
 - (c) Motivation;
 - (d) Self-activity;
 - (e) Apperception. (10)
3.
 - (a) What is meant by objective teaching? (7)
 - (b) Show how it may properly be employed in teaching the multiplication of a fraction by a fraction. (8)
4.
 - (a) Explain and exemplify the following terms as employed in logic: Method of difference, hypothesis, immediate inference. (9)
 - (b) Criticise, with reasons, the following as a definition: (4)
"A square has four sides and right angles."
5. Respecting the dictum, "Things before words," give an application advocated (a) by Comenius; (b) by Pestalozzi; (c) by Rousseau. (12)

EXAMINATION FOR LICENSE NO. 1

JANUARY, 1911

METHODS

Time, Two hours.

Candidate's No. . . .

1. (a) State (in the order in which they should be taken up in class work) the types of examples in division which involve one or more decimal numbers. Give reasons for the order chosen. (6)
 (b) Upon what principle should the explanation of the process of dividing an integer by a decimal be based? (5)
 (c) Give an example of this kind, and show how it should be worked. (6)
2. (a) Supposing a pupil finds difficulty in remembering the product of 7 by 9, suggest a way by which he may be helped to derive it. (4)
 (b) Suggest a device for helping a pupil to remember what 17-8 is. (4)
3. (a) What should constitute the introduction, and the first lesson, on Alaska, in a fifth year class? Give reasons. (10)
 (b) Give, in the correct order, the topics of the succeeding lessons required to complete the subject with this class. Justify the order of your topics. (6)
4. (a) Describe the position of the pen, the right hand, the left hand, the body, and the feet in practicing free-arm-movement penmanship. (5)
 (b) What are the "elements" of which script letters are formed? (3)
 (c) Using for each a single line on the paper, execute free-arm-movement penmanship drills on the letters m, o, and r. (3)
5. (a) Set forth fully what is meant by "teaching" a subject. (10)
 (b) Illustrate the answer to (a) by describing how the teaching of a topic in history, such as the causes of the American Revolution, may best be carried on. (10)
6. "Horace Mann laid hold of the spirit of the inductive method of teaching."—Hinsdale.
 (a) What is the gist of the inductive method? (6)
 (b) Instance topics in arithmetic, grammar, and nature study to which this method is naturally applicable, and show how the inductive process is involved in the teaching of each topic. (12)

EXAMINATION FOR LICENSE NO. I

JANUARY, 1911

ENGLISH

Time, Two hours.

Candidate's No.

1. 1. Eternal spirit of the chainless mind!
 2. Brightest in dungeons, Liberty, thou art.
 3. For there thy habitation is the heart—
 4. The heart which love of thee alone can bind;
 5. And when thy sons to fetters are consigned—
 6. To fetters, and the damp vault's dayless gloom—
 7. Their country conquers with their martyrdom,
 8. And Freedom's fame finds wings on every wind.
 9. Chillon! thy prison is a holy place,
 10. And thy sad floor an altar, for 'twas trod
 11. Until his very steps have left a trace,
 12. Worn as if thy cold pavement were a sod,
 13. By Bonnivard!—May none those marks efface!
 14. For they appeal from tyranny to God.—Byron.
 (a) Give the syntactical relationship of each subordinate clause in the second sentence. (3)
 (b) Give the syntactical relationship of *brightest* (line 2); *alone* (line 4); tell the object of *can bind* (line 4). (3)
 (c) Give the meaning in its connection of *consigned* (line 5); *efface* (line 13); *appeal* (line 14). (3)
 (d) Point out, in this passage, an example of periodic construction; also one of loose construction. (3)
 (e) Write with diacritical marks: *dungeons*, *vault*, *efface*, *tyranny*, *God*. (Give the key for your use of diacritical marks.) (2½)
2. Correct two errors in each of the following sentences, and give a reason for each correction: (6)
 (a) One cannot help but admire that sort of a man.
 (b) I don't know as I will be admitted.
 (c) Last night's performance was as bad as the night before.
3. (a) Give the plural of wharf, solo, spoonful, court-martial, t (i. e., the letter t). (2½)
 (b) Give the possessive, singular and plural, of hero, baby, it, son-in-law. (4)
4. The terms "objective," "etymological," "inductive," are used to designate methods of teaching the meaning and use of words. Describe briefly each of these methods, giving one or more words to which the method is adapted. (9)

5. Describe four distinct types of exercises (or drills) that may profitably be employed in teaching beginners to read. Tell the purpose of each exercise described. (12)
6. (a) Name three types of exercises in composition suitable for a seventh year class.
 (b) Give two appropriate subjects under each type.
 (c) Describe how the material for the composition under each title is to be gathered, developed, or presented. (12)

EXAMINATION FOR LICENSE NO. 1

JUNE, 1911

HISTORY AND PRINCIPLES

Time, Two hours.

Candidate's No.

1. (a) What is an instinct? (1)
 (b) Name eight instincts. (2)
 (c) Of what use in the disciplining of pupils is a teacher's knowledge of instincts? Illustrate. (3)
 (d) Illustrate how, in a matter of class instruction, a teacher may appeal to a lower instinct; how, in the same case, the teacher may appeal to a higher instinct. (4)
2. Explain the following and illustrate them from probable class room experience: (8)
 (a) Arousing a motive by giving "an idea of the end."
 (b) Direct interest; indirect interest.
 (c) Deliberation.
 (d) Visualization.
3. What is meant by *generalization* as a "step" in teaching? Illustrate from a lesson in fractions. What is the value of this step? (9)
4. Give three psychological reasons for using the blackboard in the class room. (9)
5. (a) State the rules of logical division. (2)
 (b) Distinguish, with the aid of examples, "distributed predicate" and "undistributed predicate." (4)
 (c) Throw the following into the form of a syllogism and criticise as reasoning: (4)
 "Dogs, not being cats, cannot climb trees."
6. (a) Name any point of similarity that is to be found in the educational ideas of Rousseau, Pestalozzi, Herbart, Froebel; and show how Herbart and Froebel applied the point in question. (6)
 (b) Name one distinguishing feature of the doctrine of each. (8)

EXAMINATION FOR LICENSE NO. 1

JUNE, 1911

METHODS OF TEACHING

Time, Two hours.

Candidate's No.

1. (a) Make and solve a practical problem in each of the following types: Finding what fractional part one number is of another; finding a whole when a fractional part is given. (8)
(b) Explain, as to pupils, the solution of the first problem given in answer to (a). (4)
(c) What is one of the types not mentioned under (a)? Illustrate it. (4).
2. (a) Show graphically that $\frac{3}{5}$ (of 1) is equal to $3 \div 5$. (6)
(b) Describe how pupils should be taught the reduction of a common fraction to a decimal. Illustrate. (10)
3. State and solve a practical problem (a) in finding the cost of goods that have been sold at a per cent. of loss; (b) in finding the rate of interest; (c) in finding the area of a trapezoid. Use a drawing to illustrate (c). (12)
4. (a) What is climate? (2)
(b) State the conditions which affect or determine climate. (8)
(c) Show how pupils may be led to make correct inferences regarding the climate of two of the following countries: England, Mexico, British Colombia, Brazil. (6)
5. (a) What may be three legitimate purposes of reviews in the class room? (3)
(b) Describe three good methods of reviewing in history. (6)
(c) With reference to the history of the Civil War, show how these three methods of reviewing may properly be used. (9)
6. On each of two of the following topics plan a lesson, giving materials, experiments, and observations to be made from nature: (12)
(a) The relation of sunlight to plant life.
(b) The propagation or transmission of heat.
(c) The structure, functions and care of the teeth.

EXAMINATION FOR LICENSE NO. I

JUNE, 1911

ENGLISH

Time, Two hours.

Candidate's No.

NOTE.—For each error in spelling or grammar half a credit will be deducted from the total obtained on this paper.

1. Yes! let the rich deride, the proud disdain,
 Those simple blessings of the lowly train;
 To me more dear, congenial to my heart,
 One native charm, than all the gloss of art.
 5 Spontaneous joys, where nature has its play,
 The soul adopts, and owns their first-born sway;
 Lightly they frolic o'er the vacant mind,
 Unenvied, unmolested, unconfin'd.
 But the long pomp, the midnight masquerade,
 10 With all the freaks of wanton wealth array'd,
 In these, ere triflers half their wish obtain,
 The toiling pleasure sickens into pain;
 And even while fashion's brightest arts decoy,
 The heart, distrusting, asks if this be joy.

Oliver Goldsmith.

- (a) Give the syntactical relationship of each subordinate clause in the selection. (5)
- (b) Give the syntactical relationship of *disdain* (line 1); *charm* (line 4); *gloss* (line 4); *unenvied* (line 8). (4)
- (c) Give the meaning of *deride* (line 1); *train* (line 2); *congenial* (line 3); *gloss* (line 4); *spontaneous* (line 5); *owns* (line 6); *wanton* (line 10); *decoy* (line 13). (4)
2. Use the following words in sentences in a way to indicate their meaning: *insidious*, *seditious*, *sedentary*, *futile*, *senile*. (5)
3. Indicate by diacritical marks (or in some other way) the correct pronunciation of the following words: *futile*, *longer*, *manger*, *wherewithal*. (Give the key for your use of diacritical marks.) (4)
4. Point out in detail the errors in the following sentences, and write the sentences in proper form: (6)
 - (a) He don't fear me saying anything about it.
 - (b) Approving of this idea, the wounded horse was killed at once and the march resumed.

- (c) When the chief engineer reached the wreck, he found that every one of the men had taken off their coats and went to work to clear the track.
5. Tell how spelling should be taught in the lower grades. (8)
6. Show how a teacher may advantageously employ the following in the teaching of reading to beginners. (a) motivation, (b) self-activity, (c) multiple sense appeal. (9)
7. (a) Taking each of the following types of exercises in turn, give with reasons your opinion as to its educational value: (1) Transcription, (2) Dictation, (3) Reproduction, (4) Paraphrasing, (5) Drills in construction of sentences. (5)
- (b) Describe, with reasons, how an exercise in dictation should be conducted. (5)
8. Write in muscular free arm penmanship the first four lines of the selection quoted in Question 1. (5)

EXAMINATION FOR LICENSE NO. I

JANUARY, 1912

HISTORY AND PRINCIPLES

Time, Two hours.

Candidate's No.

1. (a) State, and illustrate, the two main functions of the spinal cord. (2)
- (b) Contrast the functions of the brain with those of the spinal cord. (2)
- (c) What is *aphasia*, and how may it be accounted for physiologically? (1)
2. Explain the following and illustrate from probable class room experience: (9)
- (a) Voluntary attention; non-voluntary attention.
- (b) "Development in perception really involves perceiving *new objects* in the old. . . . We cannot continue to perceive an object beyond a moment or two, unless we perceive it in a new manner."
- (c) Deductive reasoning.
3. (a) State the uses of habit. (4)
- (b) Give four general directions for breaking a bad habit. (4)
4. State the advantages and the disadvantages of concert recitation. (6)
5. Describe and illustrate two general means of fixing points in the memory. (6)
6. A scientist placed on a table some food of which roaches are fond and surrounded the food with a low wall of cardboard. He

then put some roaches on the table; they made straight for the food. He then put on the table other roaches, having first removed their antennæ; these roaches did not seek the food, even though they wandered about quite close to it.

What, if any, inference as to cause was the scientist justified in drawing?

What kind of reasoning and which "method" (i. e., of "agreement," of "concomitant variations," etc.) is involved? (4)

7. Explain and illustrate these terms as used in logic: contradictory proposition; fallacy of undistributed middle. (6)
8. (a) Describe the education of girls at Sparta or at Athens in the Fifth Century B. C. (3)
 (b) Tell to what extent the Spartan education of boys made for the development of strong moral character. Give reasons. (5)
9. "Take example by the schools of the Jesuits, for better do not exist."—Bacon.
 Give facts in support of this statement. (8)

EXAMINATION FOR LICENSE NO. 1

JANUARY, 1912

METHODS

Time, Two hours.

Candidate's No.

1. In the case of the following processes, state and exemplify modes of verifying or checking results which are suitable to pupils below the seventh year:
 - (a) Addition (give two modes). (6)
 - (b) Finding the whole when a fractional part is given. (4)
 - (c) Reduction ascending. (4)
 2. "Since memory is served by multiple associations quite as well as by repetition, the drills employed should be varied in form, in content, and in mode of application. They should, moreover, be interesting to the children—perhaps by reason of their novelty, perhaps by affording an occasion for physical activity, or an occasion for general emulative striving, perhaps by stirring a sense of mastery, or even that sense of solidarity which the soldier feels when his regiment moves with precision and 'snap.' But in no event must drills become a mere routine, a tedious grind, a spiritless treadmill. Let us speak, therefore, not of *drill*, but of *drills*."
- In the light of the foregoing quotation, suggest three distinct types of drills under each of the following heads: (a) counting, (b) multiplication. (18)

3. Taking some one activity, industry, or experience, as a center, construct about it four practical problems involving different applications of percentage. (16)
4. (a) With respect to any two of the following topics, give an account of the points (or events) to be taught. (10)
 (b) With respect to one of the topics chosen, specify means for securing or exercising apperception, imagination, memory. (12)
 (1) Perry and the battle of Lake Erie (Grade 5B).
 (2) The Five Nations (Grade 6A).
 (3) The Dred Scot decision (Grade 6B).
 (4) The House of Stuart (Grade 7B).
 (5) Results of the French and Indian War (Grade 8A).
5. (a) With respect to the following topics, give an account of the points to be taught: (10)
 (b) Indicate the means that should be employed for testing the effectiveness of the teaching of these points. (10)
 (1) United States: Transportation and commerce by the great inland water routes (Grade 5A).
 (2) The protection of trees in cities.

EXAMINATION FOR LICENSE NO. I

JANUARY, 1912

ENGLISH

Time, Two hours.

Candidate's No.

1. (a) Give the part of speech and the syntax of the italicized words:
 (6)
 "It is not *growing* like a tree
 In bulk, doth make *man better* be,
 Or standing long an oak (three hundred *year*)
 To fall a *log* at last, bald and sear;
 A lily of a day
 Is fairer far in May,
 Although it fall and die that night—
 It was the plant and flower of light.
 In small proportions we *just* beauties see;
 And in short measures life may perfect be."
 —Ben Jonson.
- (b) What does the phrase *in bulk* modify? What is the subject of *doth make*? (2)

- (c) Explain the meaning of the last two lines, and show their connection with the preceding part of the poem. (6)
2. Point out each error in the following sentences, and write the sentences in proper form:
- (a) This law dont deprive anyone of rights that they already possess. (4)
- (b) Approaching the city its first sight impressed me with the idea that it was not much of a place, the houses seemed sort of ugly and scattering. (8)
3. Give the meaning of the prefixes found in the following words, and give for each another word containing it: antagonist, concur, incumbent, abstain, impious. (5)
4. Use the following words in sentences in such a way as will indicate clearly their meaning:
- (a) Evasion, duplicity, laconic, emigrant. (4)
- (b) Noxious, obnoxious; right, privilege; can but, cannot but. (6)
5. Assuming, on the part of the class, a knowledge of "adjective phrase" (and "adverb"), tell how "adverbial phrase" should be taught. Illustrate. Include two types of drill exercises. (8)
6. (a) What is meant by "phrasing" in reading aloud? Illustrate from a sentence of your own composition (not less than twenty words). (3)
- (b) What are the causes of poor phrasing? (4)
- (c) Describe two exercises designed to teach young children to phrase correctly in reading aloud. (4)

Appendix G

Forms for Approval of Service: Renewal of Temporary Licenses

(a) Elementary Schools

The Principal, when he has filled in his report, will forward this blank to his District Superintendent, who, after making his estimate, will transmit it to the City Superintendent of Schools.

File No.

DEPARTMENT OF EDUCATION
ELEMENTARY SCHOOLS, THE CITY OF NEW YORK

REPORT TO THE CITY SUPERINTENDENT OF SCHOOLS

Record of M....., P. S. No....., Dist. No.....
who applies for a.....Renewal of Temporary License
.....from....., 191 , to....., 191

PRINCIPAL'S REPORT

Ability to comprehend instructions.....
Ability to co-operate with other teachers.....
Skill in blackboard work.....
Skill in questioning.....
Skill in presentation.....
Use of objective illustration.....
Power to interest.....
Thoroughness of drill.....
Self-control and manners.....
Use of English language.....
Use of voice.....
Attendance.....
Punctuality.....
Personal tidiness.....
Accuracy in keeping records and making reports.....
Control of class.....
Energy and success in self-improvement.....

Principal P. S. No.....

DISTRICT SUPERINTENDENT'S ESTIMATE

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.....

District Superintendent.

DIVISION SUPERINTENDENT'S RECOMMENDATION

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Division Superintendent.

....., 191

(b) High and Training Schools

N. B.—*The Principal, when he has filled in his report, will forward this blank to the City Superintendent of Schools.*

FILE NO.....

DEPARTMENT OF EDUCATION
TRAINING HIGH SCHOOLS, THE CITY OF NEW YORK
REPORT TO THE CITY SUPERINTENDENT OF SCHOOLS

Record of M.....
..... Training High School, Borough of....., who
applies for a.....renewal of Temporary Training High School License to teach
.....from....., 191., to....., 191..

PRINCIPAL'S REPORT

Ability to comprehend instructions.....
Scholarship in special subjects.....
Skill in statement.....
Skill in questioning.....
Power to interest.....
Thoroughness in developing subject.....
Use of objective illustration.....
Thoroughness of drill.....
Self-control and manners.....
Use of voice.....
Attendance.....
Punctuality.....
Accuracy in keeping records and making reports.....
Control of class.....

Principal.

District Superintendent.

ASSOCIATE CITY SUPERINTENDENT'S RECOMMENDATION

Associate City Superintendent.

191...

(c) Teachers of Special Branches

The Director, when he has filled in his report, will forward this blank to the District Superintendent, who after making his report will transmit to the City Superintendent of Schools.

FILE No.....

DEPARTMENT OF EDUCATION
SPECIAL TEACHERS, THE CITY OF NEW YORK
REPORT TO THE CITY SUPERINTENDENT OF SCHOOLS

Record of M.....
Teacher of....., Borough of.....
District No..... who applies for a..... renewal of Temporary License to
Teach..... from..... 191...
to..... 191...

DIRECTOR'S REPORT

Ability to comprehend instructions.....
Knowledge of special subject.....
Skill in statement.....
Skill in questioning.....
Ability to assist class teachers.....
Self-control and manners.....
Use of the English language.....
Use of voice.....
Control of pupils.....
Energy and success in self-improvement.....
General remarks.....

.....
Director of.....

DISTRICT SUPERINTENDENT'S REPORT

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District Superintendent of.....

DIVISION SUPERINTENDENT'S RECOMMENDATION

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.....
Associate City Superintendent.

..... 191...

(d) Kindergarten Teachers

The Principal, when he has filled in his report, will forward this blank to the District Superintendent, who, after making his estimate, will transmit it to the Director of Kindergartens.

File No.....

DEPARTMENT OF EDUCATION
KINDERGARTEN TEACHERS, THE CITY OF NEW YORK
REPORT TO THE CITY SUPERINTENDENT OF SCHOOLS

Record of M....., P. S. No....., Dist. No.....
who applies for a.....Renewal of Temporary Kindergarten License
from....., 191 , to....., 191 .

PRINCIPAL'S REPORT

Ability to comprehend instructions.....
Educational use of gifts.....
Educational use of occupations.....
Ability in telling stories.....
Musical ability—A. Instrumental.....
 B. Vocal.....
Ability to co-operate with other teachers.....
Self-control and manners.....
Daily preparation of work.....
Accuracy in keeping and making reports.....
Ability in leading children to form good habits.....
What effort has applicant made to improve her scholarship and professional skill?.....
.....
.....
Is applicant successful in conducting Kindergarten Mothers' Meetings?.....
.....
General Remarks.....
.....

Principal of P. S. No.....

DISTRICT SUPERINTENDENT'S REPORT AND RECOMMENDATIONS

.....
.....

District Superintendent.

DIRECTOR'S REPORT

.....
.....

Director of Kindergartens.

DIVISION SUPERINTENDENT'S RECOMMENDATION

.....
.....

Division Superintendent.

(e) Principals and Assistant Principals

ELEMENTARY SCHOOLS

Principal,
The District Superintendent, when he has filled in his report, will forward this blank
to the City Superintendent of Schools.

DEPARTMENT OF EDUCATION

THE CITY OF NEW YORK

FILE NO.....

REPORT TO THE CITY SUPERINTENDENT OF SCHOOLS

Record of M.....P. S....., Dist. No.....
Borough of....., who applies for a.....renewal of
License as (Principal)
(Assist. to Principal) of an elementary school.

LOCATION OF SCHOOL	DATES
.....	From.....to.....
.....	From.....to.....
.....	From.....to.....

DISTRICT SUPERINTENDENT'S REPORT

1. What is the effect on the school of the applicant's examinations and inspections?
.....
2. Conferences with teachers—how and when conducted?
..... Their effects?.....
.....
3. (a) Has the applicant been successful in guiding and assisting weak or inexperienced
teachers?.....
(b) What means has he used?.....
4. (a) What records of school work (not statistics) has the principal kept?.....
.....
(b) Are they satisfactory?.....
(c) If not, in what respect are they faulty?.....
.....

5. (a) Has the applicant intelligently interpreted the course of study?.....
.....
(b) If not, in what respects has he failed?.....
.....
6. (a) Has applicant shown good judgment in (a) selecting, and (b) ordering text-books?
.....
(b) If not, give instances.....
.....
7. (a) Does the applicant unify and systematize the work of the school?.....
.....
(b) If not, in what respects has he failed?.....
.....
8. Describe the applicant's influence on methods of teaching?.....
.....
9. Describe the applicant's influence on school discipline?.....
.....
10. (a) Does the applicant exercise proper supervision over heating, lighting, ventilation
and cleanliness of his school?.....
.....
(b) If not, in what respects has he failed?.....
.....
11. Are the applicant's manners, conversation and conduct those becoming a principal?
.....
12. General remarks:
.....
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.....
District Superintendent.

DIVISION SUPERINTENDENT'S RECOMMENDATION

.....
Division Superintendent.

Appendix H

Forms for Approval of Service: Advance in Salary

(a) Elementary Schools: Report by Principal

DEPARTMENT OF EDUCATION

ELEMENTARY SCHOOLS, THE CITY OF NEW YORK

SPECIAL REPORT ON THE WORK OF

..... Grade....., P. S.....

District....., who applies for approval of service under Section 65 of the By-Laws.

PRINCIPAL'S REPORT

- | 1 As to applicant's | | Rating | Rating |
|---------------------|---|--------|--|
| a) | Ability to comprehend instructions..... | g) | Use of objective illustration..... |
| b) | Use of the English language..... | h) | Thoroughness of drill..... |
| c) | Skill in blackboard work..... | i) | Co-operation with the other teachers..... |
| d) | Skill in questioning..... | j) | Self-control and manners..... |
| e) | Power to interest the class as a whole..... | k) | Use of voice..... |
| f) | Thoroughness in developing subject..... | l) | Accuracy in keeping records and making reports.. |
2. a) Does the applicant continue to improve in scholarship?..... If so, specify the means.....

 b) Is the applicant still improving as a teacher?..... In what respects?.....

 c) Is the applicant successful in the proper advancement of bright pupils?..... Give details.....

 d) In the bringing-up of backward pupils?..... Give details.....

 e) What means does applicant employ to secure co-operation of parents in the work of h...pupils?....

 f) What interest does applicant take in plays and games of h...pupils?.....

 g) What means does applicant employ to control h...pupils?.....

 h) What has applicant done to prevent and suppress truancy?.....

 i) Is the teacher able to teach a boys' or a mixed class?.....
 j) Is the teacher able to teach in the present schedule, a class of any grade other than the present one?

 3. Rate the applicant's influence upon pupils in developing habits of
 a) Honor
 b) Order
 c) Self-reliance
 d) Self-control
 e) Courtesy
 f) Good Posture
 4. Days of absence during current term..... Times late.....
 5. Is this teacher now absent.....

191.....

NOTE.—This report must be filed with the District Superintendent at least six weeks before the 3d, 6th, 9th, 12th or 15th annual increase of the applicant is due. The District Superintendent will please forward this report with his own to the Division Superintendent at least one week before the meeting of the Board of Superintendents at which the applicant's services are to be considered.

(b) Elementary Schools: Report by District Superintendent

DEPARTMENT OF EDUCATION
ELEMENTARY SCHOOLS, THE CITY OF NEW YORK

SPECIAL REPORT ON THE WORK

.....Grade....., P. S.....
District....., who applies for approval of service under Section 65 of the By-Laws

DISTRICT SUPERINTENDENT'S REPORT

I have made a thorough personal examination of this teacher's work in the following subjects:

.....
and I have examined the work of the pupils in the following subjects:

1. My ratings of the teacher's work are as follows:

Subject	Rating	Subject	Rating
.....

2. The results of my examination of the pupils are as follows:

Subject	Rating	Subject	Rating
.....

3. The following characterize

(a) Applicant's method of conducting a lesson.....
.....

(b) Applicant's attitude toward pupils.....
.....

(c) Pupils' attitude toward applicant.....
.....

GENERAL REMARKS

.....
.....
.....
.....

District Superintendent.

....., 191...

NOTE.—This report must be filed with the Division Superintendent at least one week before the meeting of the Board of Superintendents at which the applicant's services are to be considered.

Forms for Ratio: Teaching Efficiency
(a) Annual Ratio: District Superintendent

(a) Annual Ratio District Superintendent

<i>Public School.</i>	<i>Dis</i> <i>ult</i> <i>No.</i>	<i>Borough of</i>
<i>Principal</i>		<i>Assistant to Principal.</i>
<i>Assistant to Principal</i>		<i>Assistant to Principal.</i>
<i>Additional Teacher</i>		<i>General Estimate</i>
<i>Rating of Teachers for Year Ending</i>		191.....
		(Signed).....
		<i>District Superintendent.</i>

NOTE—In rating teachers on this sheet the abbreviation should be used as follows: Meritorious: A (highest grade), B+, B. Non-Meritorious: C (inferior), D (deficient). When the superintendent's estimate on teacher's ability to instruct or to discipline is less than B, a detailed report is required under 2 or 3. This detailed report may be omitted in cases where estimate on the teacher's ability to instruct or discipline is B or higher. The district superintendents are to report upon the work and attitude of all teachers, regular and special (except substitutes), who have been employed during any portion of the term. Teachers of special subjects should be reported on a separate blank.

[illegible]

DEPARTMENT OF EDUCATION
THE CITY OF NEW YORK

NOTE.—In rating principals and others on this sheet the abbreviations should be used as follows: **M**entor; **II** (highest grade); **G**, **F**, **N**on-Mentor; **E** (interior), **D** (deficient). The ratings of all persons regularly assigned to the charge of independent schools should appear on this sheet, including those that also teach classes.

DISTRICT	SCHOOL	NAME Surname first in numerical order of districts, the schools of each district in numerical order.	GENERAL RATING	DETAILED RATINGS
				Effect of Examinations and Inspections
				Character and Effect of Conferences with Teachers
				Guidance and Assistance of Weak Teachers
				Judgment in Assigning Teachers to Classes
				Discrimination in Ratings of Teachers
				Character of Record Kept (Including Statistics)
				Interpretation of Course of Study and Selection of Text- Books
				Grading and Promotion of Pupils
				Influence on School Discipline and Supervision of Truancy
				Supervision of Janitor's Work
				Supervision of Recesses, Games, Athletics, etc.
				Co-operation with Other Principals Using School Premises
				Manners, Conversation, Conduct

(d) Annual Rating of Assistants to Principals: District Superintendent
DEPARTMENT OF EDUCATION

THE CITY OF NEW YORK

Ratings of Assistants to Principals

To the City Superintendent of Schools.

10 The City Superintendent of Schools:
The following ratings of Assistants to Principals in Districts.....and.....for the year,
ending.....19.....are respectfully submitted.

Signed.

District Superintendent.

NOTE—In rating assistants to principals on this sheet the abbreviations should be used as follows: { Meritorious: (Highest Grade) O, Q, Non-Meritorious: S (Inferior, U (Deficient).

[illegible]

Appendix J

Form for Report upon Superior Merit, 1911

DEPARTMENT OF EDUCATION

THE CITY OF NEW YORK

.....High School
.....191

MR. WILLIAM H. MAXWELL,
Chairman, Board of Examiners.

Dear Sir:

We, the undersigned committee appointed to report upon the claims of teachers in the above high school to be adjudged teachers of "superior merit", after the 9th and after the 12th salary year, beg leave to present the following report upon

..... { Assistant }
..... { First Assistant } Teacher of.....

who is in the.....year of High School service:
(Ninth or subsequent)

1. (a) Describe the results of this teacher's work during the past three years in advancing his students in the subject or subjects he teaches.

(b) State the data on which you base your answer, giving in general terms results of his pupils' examinations, proportion of his pupils promoted, extent to which such promoted pupils sustained themselves in the advanced work. In case of poor results, state any modifying circumstances that should be taken into consideration.

2. Give the strong and the weak points of the claimant's method of conducting a lesson as to the following:

- (a) Teaching new matter
- (b) Teaching students how to study (including method of attacking the problems peculiar to the teacher's subject)
- (c) Drill (fixing in mind points already taught)
- (d) Interest of entire class

3. (a) Success in rapid advancement of bright pupils. Give details.

(b) Success in bringing up backward pupils. Give details.

4. Describe the influence on students as to the development of habits as to
Honor Orderliness Self-reliance Self-control

Courtesy Good physical posture

5. (a) Describe the teacher's attitude toward the pupils

(b) The pupils' attitude toward the teacher

6. (a) Does the teacher maintain and increase his proficiency in subject matter?
If so, specify the means.
- (b) Is he still improving as a teacher?
- (c) In what respects?
7. Characterize the teacher's habitual use of the English language. State defects, if any.
8. Accuracy in keeping records and making reports.
9. State any notable deficiencies in personal habits or in temperament and disposition (including readiness to co-operate with the principal and with other teachers in the work of the school).
10. State any service he has rendered to the school or to its students outside of class-room work.
- (To be answered only in case of First Assistants.)
11. Describe the results of the First Assistant's work in
 - (a) organizing and unifying the work of Assistant Teachers in h subject
 - (b) influence in methods of teaching
 - (c) ability in the performance of executive and administrative assignments.

Other comments.

Date.....191
Principal.

Date.....191
District Superintendent.

Date.....191
Associate City Superintendent.

Pursuant to section 65 of the by-laws of the Board of Education, declaration of this claimant as a teacher of superior merit for the.....year of service as assistant first assistant teacher in a high school training school for teachers was made has been withheld by the Board of Examiners.

Date:

Secretary Board of Examiners.

THE INTERMEDIATE SCHOOL

REPORT ON

EDUCATIONAL ASPECTS OF THE
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY
OF THE BOARD OF ESTIMATE
AND APPORTIONMENT

PART II

Subdivision I

Elementary Schools

SECTION F.—PROBLEMS IN ELEMENTARY SCHOOL ORGANIZATION
AND ADMINISTRATION

I. Intermediate Schools

BY

FRANK P. BACHMAN, PH.D.

Formerly Assistant Superintendent of Schools, Cleveland, Ohio

CITY OF NEW YORK

1911-1912

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THE INTERMEDIATE SCHOOL

EDUCATIONAL AND ECONOMIC EFFICIENCY

Introductory

An intermediate school in The City of New York is an elementary school which receives only pupils promoted from the 6B grade, and in which the instruction is restricted to the 7th and 8th years of the elementary school course of study.

There are three such schools in Greater New York, all in Manhattan: Public School Number 24, opened in 1905; 62, opened in 1905; and 159, opened in 1907.¹ These schools were organized to relieve congestion. The 7th and 8th year classes in several neighboring buildings were small, and, by bringing these pupils into one school, it was possible to set free a number of rooms for the use of children of the lower grades. The organization of these intermediate schools at once made clear the worth of this kind of school as a means of relieving congestion, also the economy of such schools in caring for 7th and 8th year pupils, as compared with schools having all grades. The amount of congestion is steadily increasing—the number of pupils on part time having increased from 69,035, September 30, 1907, to 79,338, September 30, 1911,² but no new intermediate schools have been established.

Our study of the intermediate schools now in operation will not only show that the intermediate school, apart from its serviceableness in relieving congestion, affords opportunity for economy, but will show besides that it affords peculiar opportunities to adapt the education of 7th and 8th year pupils to their varying needs. Our investigation accordingly comprises (1) a study of the educational efficiency of the intermediate school; (2) a study of its economy; and (3) a review of the peculiar opportunities it affords for adapting the instruction to the varying needs of 7th and 8th year pupils.

A—Educational Efficiency of the Intermediate School

The City Superintendent of Schools records the establishment of intermediate schools as one of the achievements since consolidation. Both the City Superintendent of Schools and the Board of Education are favorable to intermediate schools and to increasing the number of

¹ Public school number 159 has classes below the 7A grade. It is, however, officially recognized as an intermediate school.

² Annual report of the City Superintendent of Schools, 1907, and special report made to the Committee on School Inquiry.

them. There are, however, Associate Superintendents, District Superintendents and Principals who are unfavorable and who express the opinion:

(1) That, when the 7th and 8th grades are removed from a school, in order to organize an intermediate school, a larger per cent. of pupils leave the 6B grade without completing it in schools having only 1A-6B grades, than leave the 6B grade in schools having all grades.

(2) That a larger per cent. of pupils promoted from the 6B grade fail to enter the 7A grade when they must go to an intermediate school, than fail to enter the 7A grade when they can advance to this grade in their home school.

(3) That a larger per cent. of 7th and 8th year pupils leave the 7th and 8th grades without completing these grades in intermediate schools than leave these grades in schools having all grades.

No data have ever been collected by the Board of Education on these points.

Number of pupils leaving the 6B grade without completing this grade

Do a larger per cent. of pupils leave the 6B grade without completing it in schools having only 1A-6B grades than leave this grade in schools having all grades?

A final answer to this question would involve collecting data for a number of terms on children leaving 6B classes in schools having only 1A-6B grades, and on children leaving the same classes in schools having all grades. With the time at our disposal it was impossible to do this. We have, however, collected such data for the February-June term of 1911, not only for the 6B, but also for the 5B and 6A, grades. See Table I.¹

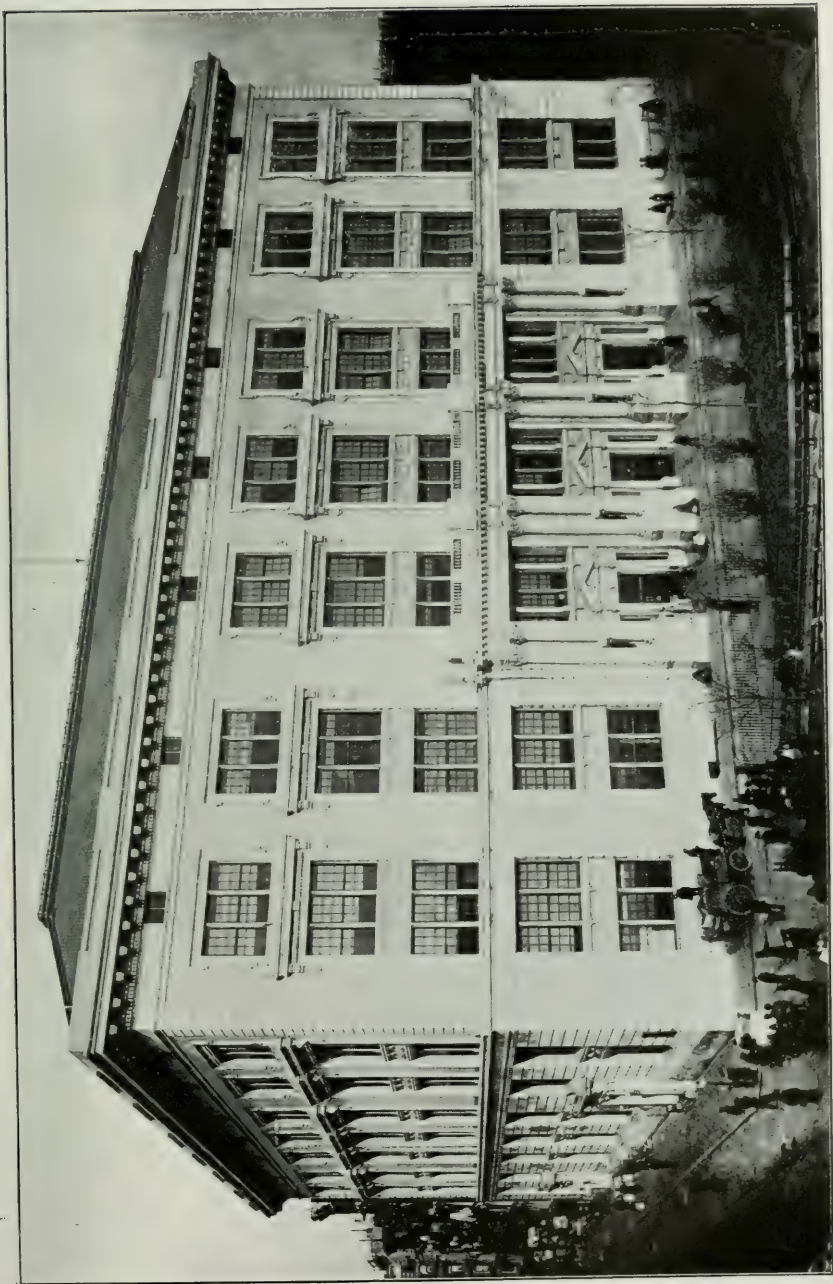
Table I shows, for the February-June term of 1911, the enrollment² in the 5B, 6A, and 6B grades, and the number of pupils who left³ these grades in schools having all grades (1A-8B); and also, by grades and for the same schools, the per cent. of the enrollment leaving. The same facts are also shown for neighboring schools having 1A-6B grades.

¹The schools having all grades (1A-8B) compared in this report with intermediate schools are attended by about the same type of pupils as attend the intermediate schools, hence the cost of operation and the educational results achieved in the two kinds of schools should be about the same.

The data in all the tables of this study, unless it is otherwise stated, were taken from schools located in the same districts with intermediate schools 24, 159, and 62, or located in districts contiguous to these intermediate schools. Also, the data collected are from all the schools in the given districts of the particular kind under discussion, that is, from all the schools in the given districts having only 1A-6B grades, from all the schools in the given districts having all grades (1A-8B), and from the three intermediate schools.

²Enrollment, as used here and throughout this study, includes all pupils, exclusive of transfers, on the register during the term.

³Leaving, as used here and throughout this study, includes all pupils, exclusive of transfers, who left school during the term.



INTERMEDIATE PUBLIC SCHOOL No. 62, MANHATTAN.

There are three Intermediate Schools in the City of New York, all in the Borough of Manhattan. They care for seventh and eighth year pupils only, and were organized to relieve congestion. P. S. 62 which was completed in 1905 is the largest of such schools. It contains ninety rooms and has graduated twenty-two classes since it was opened.



INTERMEDIATE SCHOOL, PUBLIC SCHOOL 24, MANHATTAN.



INTERMEDIATE SCHOOL, PUBLIC SCHOOL 159, MANHATTAN.

Table I—Pupils Leaving Schools Having All Grades (1A-8B)

Schools	Dis- tricts	5B Grade			6A Grade			6B Grade			Grand Total		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
72	17	Enrollment...	144	144	...	165	165	170	170	170	479	479	479
		Leaving...	7	7	...	16	16	16	16	16	39	39	39
83	17	Enrollment...	441	441	358	358	358	282	282	282	1,081	1,081	1,081
		Leaving...	21	21	45	45	45	30	30	30	96	96	96
168	17	Enrollment...	202	202	...	308	308	265	265	265	775	775	775
		Leaving...	10	10	...	43	43	32	32	32	85	85	85
171	17	Enrollment...	198	198	119	119	119	201	201	201	518	518	518
		Leaving...	12	12	9	9	9	15	15	15	36	36	36
68G	21	Enrollment...	76	76	...	63	63	88	88	88	227	227	227
		Leaving...	7	7	...	5	5	10	10	10	22	22	22
90	21	Enrollment...	118	118	...	170	170	144	144	144	432	432	432
		Leaving...	7	7	...	14	14	16	16	16	37	37	37
119	21	Enrollment...	174	174	...	170	170	134	134	134	478	478	478
		Leaving...	19	19	...	17	17	9	9	9	45	45	45
22	4	Enrollment...	137	137	114	114	114	137	137	137	388	388	388
		Leaving...	4	4	14	14	14	6	6	6	24	24	24
31	4	Enrollment...	102	102	...	89	89	74	74	74	265	265	265
		Leaving...	1	1	...	6	6	9	9	9	16	16	16
147	4	Enrollment...	54	54	89	89	89	80	80	80	307	307	307
		Leaving...	9	9	5	5	5	7	7	7	21	21	21
110	4	Enrollment...	40	40	24	24	24	8	8	8	72	72	72
		Leaving...	1	1	3	3	3	1	1	1	5	5	5
34	3	Enrollment...	123	123	104	104	104	186	186	186	413	413	413
		Leaving...	5	5	...	2	2	12	12	12	19	19	19
7	2	Enrollment...	42	42	81	81	81	73	73	73	196	196	196
		Leaving...	3	3	2	2	2	8	8	8	13	13	13
Total		Enrollment...	1,119	1,047	2,166	889	1,139	2,028	967	1,053	2,975	3,239	6,214
		Leaving...	55	63	118	80	110	190	79	103	214	276	490
Per cent. of enrollment leaving...		4.92	6.02	5.45	9.00	9.66	9.37	8.17	9.78	9.01	7.19	8.52	7.88

Pupils Leaving Schools Having 1A-6B Grades

Schools	Dis- tricts	5B Grade			6A Grade			6B Grade			Grand Total		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
101	17	Enrollment...	104	104	Enrollment...	96	96	Enrollment...	50	50	Enrollment...	250	250
		Leaving...	3	3	Leaving...	1	1	Leaving...	4	4	Leaving...	8	8
57	20	Enrollment...	207	207	Enrollment...	211	211	Enrollment...	165	165	Enrollment...	583	583
		Leaving...	15	15	Leaving...	17	17	Leaving...	9	9	Leaving...	41	41
78	20	Enrollment...	151	151	Enrollment...	227	227	Enrollment...	106	106	Enrollment...	484	484
		Leaving...	19	19	Leaving...	15	15	Leaving...	11	11	Leaving...	45	45
103	20	Enrollment...	104	331	Enrollment...	147	242	Enrollment...	99	190	Enrollment...	298	763
		Leaving...	8	9	Leaving...	16	22	Leaving...	6	15	Leaving...	21	54
39	21	Enrollment...	338	422	Enrollment...	302	356	Enrollment...	207	254	Enrollment...	847	1,032
		Leaving...	26	36	Leaving...	37	49	Leaving...	32	35	Leaving...	25	120
89	21	Enrollment...	176	176	Enrollment...	167	167	Enrollment...	152	152	Enrollment...	495	495
		Leaving...	21	21	Leaving...	13	13	Leaving...	16	16	Leaving...	50	50
100	21	Enrollment...	45	45	Enrollment...	33	33	Enrollment...	32	32	Enrollment...	110	110
		Leaving...	1	1	Leaving...	4	4	Leaving...	2	2	Leaving...	7	7
12	4	Enrollment...	133	225	Enrollment...	90	176	Enrollment...	78	266	Enrollment...	412	667
		Leaving...	14	22	Leaving...	13	16	Leaving...	10	24	Leaving...	25	62
88	4	Enrollment...	51	51	Enrollment...	44	44	Enrollment...	39	39	Enrollment...	134	134
		Leaving...	1	1	Leaving...	...	...	Leaving...	3	3	Leaving...	4	4
98	4	Enrollment...	155	207	Enrollment...	137	178	Enrollment...	100	143	Enrollment...	332	528
		Leaving...	7	4	Leaving...	14	19	Leaving...	10	14	Leaving...	31	44
42	3	Enrollment...	153	153	Enrollment...	128	128	Enrollment...	109	109	Enrollment...	390	390
		Leaving...	14	14	Leaving...	8	8	Leaving...	11	11	Leaving...	33	33
62a	3	Enrollment...	89	89	Enrollment...	82	82	Enrollment...	85	85	Enrollment...	256	256
		Leaving...	...	...	Leaving...	...	...	Leaving...	...	...	Leaving...	...	...
75	3	Enrollment...	198	198	Enrollment...	178	178	Enrollment...	188	188	Enrollment...	564	564
		Leaving...	11	11	Leaving...	7	7	Leaving...	9	9	Leaving...	27	27
92	3	Enrollment...	114	114	Enrollment...	122	122	Enrollment...	120	120	Enrollment...	356	356
		Leaving...	11	11	Leaving...	15	15	Leaving...	9	9	Leaving...	35	35
2b	2	Enrollment...	220	220	Enrollment...	197	197	Enrollment...	201	201	Enrollment...	618	618
		Leaving...	13	13	Leaving...	13	13	Leaving...	20	20	Leaving...	46	46
65Bg	2	Enrollment...	111	214	Enrollment...	104	178	Enrollment...	83	148	Enrollment...	242	540
		Leaving...	6	8	Leaving...	14	18	Leaving...	5	10	Leaving...	17	42
177	2	Enrollment...	138	138	Enrollment...	120	120	Enrollment...	141	141	Enrollment...	399	399
		Leaving...	10	10	Leaving...	12	12	Leaving...	13	13	Leaving...	35	35
Total		Enrollment...	1,517	3,045	Enrollment...	1,413	2,735	Enrollment...	1,294	2,389	Enrollment...	4,235	8,169
		Leaving...	106	219	Leaving...	102	229	Leaving...	94	205	Leaving...	309	653
Per cent. of enrollment leaving...			6.99	7.19		7.22	8.37		7.26	8.58		7.29	7.99

Per cent. of enrollment leaving...

It will be observed that the losses, both in schools having all grades and in schools having only 1A-6B classes, are large. These large losses in the 5B, 6A, and 6B grades are due to the fact that many children are fourteen years old or over by the time they complete the 5A grade. Twenty-five per cent. of the children in these grades of the foregoing schools on the lower east side were found to be fourteen years old and above.¹ These over-age children, being able to obtain labor certificates, leave school, from choice or necessity, in large numbers.

The total loss in the 5B, 6A, and 6B classes of schools having all grades is 7.88 per cent. of the total enrollment; in schools having 1A-6B grades, 7.99 per cent., or a difference of .11 of 1 per cent. in favor of schools having all grades. So slight is the difference in the holding power of these two kinds of schools in the 5B, 6A, and 6B grades that, had the 8,169 pupils in these grades in schools having only 1A-6B grades been in schools having all classes, only nine fewer pupils would have left these schools during the February-June term of 1911.

It should be observed, however, that the losses in schools having only 1A-6B grades are 1 per cent. less in 6A classes, and in 6B .43 of 1 per cent. less than in the corresponding classes of schools having all grades and that only in 5B classes are the losses in schools having all grades less than in schools having only 1A-6B grades. If more 5B pupils drop from schools having only 1A-6B grades, there are of course fewer left to drop from the 6A and the 6B grades, hence it may be that .11 of one per cent. represents the actual difference in the holding power of these two kinds of schools. Such a difference is, however, too small to serve as a basis of judgment.

There are, however, reasons why schools having only 1A-6B classes should be able to hold relatively more 6B pupils than schools having all grades. The highest class in any school is the object of special attention and consideration. In schools having all grades this class is the 8B; in schools having only 1A-6B grades it is the 6B. Hence, more attention and consideration are given to 6B pupils in schools having only 1A-6B grades than are given such pupils in schools having all grades. The inevitable effect of this special attention and consideration is to increase the power of schools having only 1A-6B grades to hold 6B pupils who might otherwise drop out.

From the foregoing it appears that there is at least no ground in the data collected for the February-June term, 1911, for the prevailing opinion that more children leave the 6B classes in schools having only 1A-6B grades than leave the corresponding classes in schools having all grades. Indeed, the reverse seems to be true.

¹ From reports to the Committee on School Inquiry, June, 1911.

Number of pupils promoted from the 6B grade not entering the 7A grade

Do a larger per cent. of pupils promoted from the 6B grade fail to enter the 7A grade when they must go to an intermediate school than fail to enter the 7A grade when they can advance to this grade in their home school?

Table II shows the total number of 6B promotions January 31, 1911, in schools having all grades, and the total number of 7A beginners¹ in these schools for the February-June term of 1911; also the per cent. of 6B promotions entering the 7A grade. The table also shows the same facts for contributing schools and for intermediate schools 24, 159, and 62.

Table II—6B Promotions and 7A Beginners

SCHOOLS HAVING ALL GRADES (1A-8B)			CONTRIBUTING SCHOOLS AND INTERMEDIATE SCHOOLS 24, 159, AND 62		
Total 6B Promotions Jan. 31, 1911	Total 7A Beginners Feb.-June Term, 1911	Per Cent. of 6B Promotions Entering 7A Grade	Total 6B Promotions from Contributing Schools Jan. 31, 1911	Total 7A Beginners P. S. 24, 159, and 62, Feb.-June Term, 1911	Per Cent. of 6B Promotions Entering 7A Grade
1,524	1,510	99.08	1,484	1,470	99.05

The figures for this table were taken from special reports made by the principals and are for the schools given in Table III.

Few pupils in the foregoing schools, promoted from the 6B grade in January, 1911, failed to enter the 7A grade in February—only twenty-eight out of a total of 3,008. In neither kind of school does the number failing to enter the 7A grade amount to 1 per cent. of the 6B promotions, whereas .03 of 1 per cent. measures the difference in the total per cent. of loss. This difference is in favor of the schools having all grades; but it is so small that, had the same rate of loss prevailed as prevailed in schools having all grades, not a single additional pupil out of 1,484 would have entered the 7A of intermediate schools. In a word, the same relative number of 6B promotions actually entered the 7A grade of these two kinds of schools during the February-June term of 1911.

Table III shows the number of 6B promotions June 30, 1911, in schools² having all grades, and the number of 7A beginners¹ in these schools, for the September-January term of 1911-12; also the per cent. of all 6B promotions entering the 7A grade. The table also shows the same facts for contributing schools and intermediate schools 24, 159, and 62.

¹ Includes all pupils along with transfers to other schools, in attendance at least one school day.

² See first note on page 464.

Table III—6B Promotions and 7A Beginners

SCHOOLS HAVING ALL GRADES (1A-8B)						SCHOOLS CONTRIBUTING 6B PUPILS TO P. S. 24, 159, AND 62				INTERMEDIATE SCHOOLS (7A-8B)			
Schools	Districts	Promotions 6B Grade June 30, 1911		Beginners' 7A Grade Sept.-Jan. Term, 1911-12		Schools	Districts	Promotions 6B Grade June 30, 1911		Schools	Districts	Beginners' 7A Grade Sept.-Jan. Term, 1911-12	
		Boys	Girls	Total	Boys			Girls	Total			Boys	Girls	Total
72	17	143	143	143	137	39	21	159	38	24	21	383	383
83	17	238	238	224	224	89	21	124	124	159G	20	416	416
168G	17	185	185	174	174	103	20	104	85	62	3	320	378
171	17	161	161	155	155	78	20	95	95	...	...	...	...
68G	21	66	66	63	63	57	20	153	153	...	...	...	...
90	21	120	120	118	118	157	19	1	1	...	...	...	...
119	21	125	125	112	112	159P	20	67	67	...	...	...	...
22B	4	125	125	122	122	184	19	18	18	...	...	...	...
31	4	65	65	63	63	2B	2	170	170	...	...	...	...
147	4	63	48	54	43	75	3	158	158	...	...	...	...
110	4	85	85	82	82	42	3	97	97	...	...	...	...
34	3	155	155	150	150	62GP	3	74	74	...	...	...	...
7	2	98	98	98	98	92	3	110	110	...	...	...	...
...	..	...	...	...	...	177	2	112	112	...	...	...	...
...	..	...	...	...	...	65G	2	2	2	...	...	...	...
Total	..	1,677	1,677	1,595	1,595	Total	..	736	849	Total	..	703	794
Per cent. of 6B pro-	..	...	...	...	...	Per cent. of 6B pro-	..	95.51	93.52	...	..	...	...
motions entering 7A	..	...	...	...	...	motions entering 7A	..	95.51	93.52	...	..	...	...
made.....	..	...	...	...	...	grade.....	..	95.51	93.52	...	..	...	...

These figures were taken from special reports made by the principals.

The number of children leaving school is always smaller between the Fall and Spring terms when there is practically no interruption in the work of the school than between the Spring and Fall terms when there is a long vacation. It is, therefore, not surprising, as shown in Table III, that, in the schools having all grades, 4.89 per cent. of the pupils promoted from the 6B grade in June failed to enter the 7A grade in September, and that 5.56 per cent. of the 6B pupils promoted from contributing schools failed to enter the 7A grade of intermediate schools. The pupils lost in going from contributing schools to intermediate schools were, however, greater by only .67 of 1 per cent. (5.56—4.89) than the pupils lost between the 6B and 7A of schools having all grades—a difference of ten pupils.

The factors influencing the exact number of 6B promotions entering the 7A are so many and so complex that the small difference revealed by the foregoing data might have been due to the action of any one of several factors. To illustrate: In public school number 159¹ forty 6B promotions from contributing schools failed to attend during the September-January term a single day:

Disappeared (moved, leaving no address).....	5
Working papers	15
Parochial schools	8
At home, over age	5
Moved to the country	5
At home, illness	1
Horace Mann School	1
<hr/>	
Total	40

Had the five children that disappeared and the five children that moved to the country asked for transfers, this simple fact alone would have erased any difference for the September-January term of 1911-12 in the number of 6B promotions entering the 7A of these two kinds of schools.

Apart from losses due to such causes as sickness, entering a private or parochial school, moving to another city, there is only one group of pupils, promoted from the 6B grade, that can fail to enter the 7A, *viz.*, children who are fourteen years of age and over. There are large numbers of such children—approximately each fourth child² in the schools of the City in the 6B grade has attained his fourteenth year. Any considerable difference, therefore, between the number of 6B promotions entering the 7A of schools having all grades and of intermediate schools must lie in the difference in attractiveness of these two kinds of schools for pupils fourteen years of age and over. There is no inherent reason

¹ From special report made by the principal.

² Report on Promotion, Non-Promotion and Part-Time, Table XXII and Table XXIV, Vol. I.

why intermediate schools should not be even more attractive to such children than schools having all grades.

It has been shown, therefore, that the only ground for believing that more pupils promoted from the 6B enter the 7A of schools having all grades than of intermediate schools lies in the fact that for the spring term of 1911 the difference in per cent. of 6B promotions entering these two kinds of schools was .03 of 1 per cent., and for the September-January term of 1911-12 .07 of 1 per cent.—differences so small that out of 3,069 promoted pupils from contributing schools for the calendar year 1911 only ten fewer pupils failed to enter the 7A of intermediate schools than would have entered had these 6B promoted pupils been able to enter the 7A of their home school. These differences supply no adequate basis for the foregoing belief, and hence supply no grounds for the City Superintendent of Schools and the Board of Education to change their favorable attitude toward intermediate schools.

Number of pupils leaving the 7A-8B grades without completing these grades

Do a larger per cent. of 7th and 8th-year pupils leave the 7th and 8th grades without completing these grades in intermediate schools than leave these grades in schools having all grades?

Table IV shows for the February-June term, 1911, the enrollment in schools having all grades in 7A, 7B, 8A, and 8B grades, and the number leaving each of these grades; also grade for grade and for the same schools the per cent. of the total enrollment leaving. The table also shows the same facts for intermediate schools 24, 159, and 62. (See pages 472-3.)

The per cent. of pupils leaving these two kinds of schools varies grade for grade, and is different for boys and girls. While the per cent. of loss of boys in the 7A, 7B, and 8B grades is slightly greater in intermediate schools than in schools having all grades (less than 1 per cent. in each case, amounting to a difference of six, one, and one pupils respectively), when boys and girls are taken together, .71 of 1 per cent. more 7A pupils, 1.93 per cent. more 7B pupils, 2.05 per cent. more 8A pupils, and 1.03 per cent. more 8B pupils left schools having all grades than intermediate schools. The highest per cent. of loss, it will be observed, is in the 7A in both kinds of schools. The 7A grade is apparently the most trying of the four upper grades, and particularly trying in the intermediate school. Friendships in the old school are broken off; new acquaintances need to be formed, and the pupil must adjust himself to a new school life. Despite these facts, the holding power of the 7A grade in intermediate schools is apparently greater than the holding power of the 7A grade in schools having all classes.

The total per cent. of 7A-8B pupils leaving schools having all grades is 1.75 per cent. (8.56—6.81) greater than the total losses in intermediate schools. Had the same rate of loss prevailed as prevailed in intermediate

Table IV—Withdrawals—Schools Having All Grades (1A-8B)

Schools	Dis- tricts	7A Grade			7B Grade			8A Grade			8B Grade			Grand Total		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
72	17	.....	152	152	.....	142	142	.....	135	135	.....	86	86	.....	515	515
83	17	.....	8	8	.....	18	18	.....	10	10	.....	2	2	.....	38	38
168	17	249	.....	249	220	.....	220	142	.....	142	130	.....	130	741	.....	741
171	17	31	.....	31	28	.....	28	9	.....	9	1	.....	1	69	.....	69
171	17	212	.....	212	165	.....	165	147	.....	147	110	.....	110	634	.....	634
171	17	42	.....	42	29	.....	29	18	.....	18	11	.....	11	100	.....	100
171	17	145	.....	145	121	.....	121	134	.....	134	95	.....	95	495	.....	495
68	21	13	.....	13	9	.....	9	8	.....	8	5	.....	5	35	.....	35
68	21	93	.....	93	81	.....	81	67	.....	67	64	.....	64	305	.....	305
90	21	9	.....	9	7	.....	7	11	.....	11	5	.....	5	32	.....	32
90	21	110	.....	110	140	.....	140	106	.....	106	68	.....	68	424	.....	424
119	21	9	.....	9	22	.....	22	4	.....	4	1	.....	1	36	.....	36
119	21	138	.....	138	122	.....	122	127	.....	127	87	.....	87	474	.....	474
22	4	9	.....	9	12	.....	12	6	.....	6	3	.....	3	30	.....	30
22	4	215	.....	215	227	.....	227	176	.....	176	165	.....	165	783	.....	783
31	4	27	.....	27	25	.....	25	15	.....	15	2	.....	2	69	.....	69
31	4	79	.....	79	80	.....	80	87	.....	87	48	.....	48	204	.....	204
147	4	71	.....	71	4	.....	4	11	.....	11	0	.....	0	22	.....	22
147	4	158	.....	158	152	.....	152	108	.....	108	115	.....	115	533	.....	533
110	4	15	.....	15	6	.....	6	10	.....	10	2	.....	2	33	.....	33
110	4	31	.....	31	8	.....	8	16	.....	16	1	.....	1	15	.....	15
110	4	104	.....	104	103	.....	103	104	.....	104	97	.....	97	408	.....	408
34	3	6	.....	6	8	.....	8	1	.....	1	2	.....	2	29	.....	29
34	3	103	.....	103	74	.....	74	134	.....	134	99	.....	99	410	.....	410
7	2	9	.....	9	11	.....	11	11	.....	11	7	.....	7	38	.....	38
7	2	145	.....	145	107	.....	107	108	.....	108	252	.....	252	261	.....	261
7	2	15	.....	15	4	.....	4	8	.....	8	19	.....	19	36	.....	36
Total		1,018	.....	1,018	906	.....	906	1,045	.....	1,045	605	.....	605	3,229	.....	3,229
		110	.....	110	83	.....	83	112	.....	112	17	.....	17	24	.....	24
Per cent. of enrollment leaving.		10.81	.....	10.81	9.16	.....	9.16	10.72	.....	10.72	2.81	.....	2.81	3.78	.....	3.78
		10.01	.....	10.01	7.71	.....	7.71	8.91	.....	8.91	3.31	.....	3.31	8.18	.....	8.18
		8.89	.....	8.89	8.56	.....	8.56		.....			.....			.....
		6,973	.....	6,973	3,744	.....	3,744	635	.....	635	1,240	.....	1,240	3,229	.....	3,229
		597	.....	597	333	.....	333	41	.....	41	264	.....	264	333	.....	333

These figures were taken from the reports to the Committees on School Inquiry, June, 1911.

Withdrawals—Intermediate Schools (7A-8B)

[illegible]

schools, 122 fewer pupils, out of the total of 6,973, would have left schools having all grades.

There is, therefore, no basis in the foregoing for the expressed opinion that more children leave the 7th and 8th-year classes in intermediate schools than leave the corresponding classes in schools having all grades.

Relative rate of promotion in the 7A-8B grades

That further comparisons might be made between schools having all grades and intermediate schools, data were collected on promotions and on terms of work lost and gained.

Table V shows for the February-June term, 1911, the enrollment in schools having all grades in the 7A, 7B, 8A, and 8B grades, and the number of pupils promoted June 30, 1911, in each of these grades; also grade by grade and for the same schools the per cent. of the total enrollment promoted. The table also shows the same facts for intermediate schools 24, 159, and 62. (See pages 475-6.)

The per cent. of boys promoted in the 7A, 7B, and 8B grades, as shown by Table V, is less by 7.87 per cent., 4.97 per cent., and 4.42 per cent. respectively in intermediate schools than in schools having all grades. A larger per cent. of boys in the 8A by 4.42 per cent., and a larger per cent. of girls in all four grades by 5.78 per cent., 11.40 per cent., 5.72 per cent., and .73 per cent. respectively were, however, promoted in intermediate schools than in schools having all grades; so that while in schools having all grades 83.65 per cent. of the total enrollment was promoted, in the intermediate schools the per cent. of promotion was 85.69 per cent.—a clear difference in favor of intermediate schools of 2.04 per cent. Had the same rate of promotion prevailed in the two kinds of schools, 142 more pupils, out of a total of 6,973, would have been advanced in schools having all grades.

A high percentage of promotion does not necessarily indicate a high degree of efficiency. Yet when due regard is paid to proper standards, that school is best which succeeds in advancing the largest percentage of its children.

Number of terms of work lost and gained by 7A-8B pupils

Table VI¹ shows, for certain schools having all grades, the number of graduates June 30, 1911, the terms of work lost and gained in the 7th and 8th years by these graduates, and the net terms of work lost; also the same facts for intermediate schools 24, 159, and 62. These

¹ Table VI contains data from certain schools having all grades in the same districts with intermediate schools 24, 159, and 62, and in districts contiguous to these intermediate schools. It was impossible, owing to the rush of work at the close of the school year, to collect data from all such schools in these districts.

Table V—Rate of Promotion—Schools Having All Grades (1A-8B)

Schools	Dis- tricts	7A Grade			7B Grade			8A Grade			8B Grade			Grand Total		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
72	17	Enrollment.....	152	152	.....	142	142	.....	135	135	.....	86	86	.....	515	515
		Promoted.....	127	127	.....	110	110	.....	117	117	.....	84	84	.....	438	438
83	17	Enrollment.....	249	249	.....	220	220	.....	142	142	.....	130	130	.....	741	741
		Promoted.....	204	204	.....	179	179	.....	128	128	.....	124	124	.....	635	635
168	17	Enrollment.....	212	212	.....	165	165	.....	147	147	.....	110	110	.....	634	634
		Promoted.....	145	145	.....	107	107	.....	105	105	.....	94	94	.....	451	451
171	17	Enrollment.....	145	145	.....	121	121	.....	134	134	.....	95	95	.....	495	495
		Promoted.....	116	116	.....	93	93	.....	113	113	.....	89	89	.....	411	411
68	21	Enrollment.....	93	93	.....	81	81	.....	67	67	.....	64	64	.....	305	305
		Promoted.....	47	47	.....	49	49	.....	52	52	.....	55	55	.....	203	203
90	21	Enrollment.....	110	110	.....	140	140	.....	106	106	.....	68	68	.....	424	424
		Promoted.....	98	98	.....	117	117	.....	102	102	.....	67	67	.....	384	384
119	21	Enrollment.....	138	138	.....	122	122	.....	127	127	.....	87	87	.....	474	474
		Promoted.....	108	108	.....	91	91	.....	100	100	.....	76	76	.....	375	375
22	4	Enrollment.....	215	215	.....	227	227	.....	176	176	.....	165	165	.....	783	783
		Promoted.....	180	180	.....	197	197	.....	149	149	.....	163	163	.....	689	689
31	4	Enrollment.....	79	79	.....	80	80	.....	87	87	.....	48	48	.....	294	294
		Promoted.....	65	65	.....	70	70	.....	62	62	.....	48	48	.....	245	245
147	4	Enrollment.....	158	148	306	152	104	256	108	102	210	115	75	190	533	962
		Promoted.....	137	118	255	135	81	216	96	85	181	110	73	183	478	835
110	4	Enrollment.....	3	104	107	5	103	108	6	104	110	1	97	98	15	408
		Promoted.....	3	98	101	5	95	100	5	92	97	1	95	96	14	394
34	3	Enrollment.....	103	.....	103	74	.....	74	134	.....	134	99	.....	99	410	410
		Promoted.....	83	.....	83	61	.....	61	85	.....	85	90	.....	90	319	319
7	2	Enrollment.....	145	153	298	107	108	215	.....	.....	.....	.....	.....	252	261	513
		Promoted.....	116	140	256	96	102	198	.....	.....	.....	.....	.....	212	242	454
Total		Enrollment.....	1,018	1,189	2,207	906	1,045	1,951	700	875	1,575	605	635	1,240	3,229	8,744
		Promoted.....	839	946	1,785	766	822	1,588	576	715	1,291	577	592	1,169	2,758	8,075
Per cent. of enrollment promoted.....		82.42	79.56	80.88	84.55	78.66	81.39	82.29	81.71	81.97	95.37	93.23	94.27	85.41	82.13	83.65

These figures were taken from the reports to the Committee on School Inquiry, June, 1911.

Rate of Promotion—Intermediate Schools (7A-8B)

Schools	Dis- tricts	7A Grade			7B Grade			8A Grade			8B Grade			Grand Total		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
24	21	454	.....	454	375	.....	375	310	.....	310	283	.....	283	1422	.....	1422
		304	.....	304	279	.....	279	260	.....	260	244	.....	244	1087	.....	1087
159	20	.....	441	441	.....	375	375	.....	332	332	.....	272	272	1420	1420	1420
		.....	359	359	.....	328	328	.....	293	293	.....	258	258	1238	1238	1238
62	3	.....	316	316	291	349	640	254	368	622	314	360	674	1175	1427	2602
		270	316	586	251	324	575	225	319	544	299	336	635	1045	1295	2340
Total		770	791	1561	666	724	1390	564	700	1264	597	632	1229	2597	2847	5444
		574	675	1249	530	652	1182	485	612	1097	543	594	1137	2132	2533	4665
Per cent. of enrollment promoted.....		74.55	85.34	80.01	79.58	90.06	85.04	85.99	87.43	86.79	90.95	93.99	92.51	82.09	88.97	85.69

figures were taken from special reports made by the principals of the schools represented in the table.

Table VI

Acceleration and Retardation—Schools Having All Grades (1A-8B)

Schools	Districts	Number Graduated June 30, 1911	Terms of Work Lost During 7th and 8th Years	Terms of Work Gained During 7th and 8th Years	Net Terms of Work Lost During 7th and 8th Years
72	17	84	10	2	...
83	17	124	45	4	...
168	17	94	38	0	...
171	17	89	20	6	...
22B	4	163	10	1	...
31	4	48	0	11	...
110	4	96	0	26	...
147	4	183	63	8	...
Total.....		881	186	58	128

Intermediate Schools (7A-8B)

Schools	Districts	Number Graduated June 30, 1911	Terms of Work Lost During 7th and 8th Years	Terms of Work Gained During 7th and 8th Years	Net Terms of Work Lost During 7th and 8th Years
24	21	244	83	53	...
159	20	258	41	16	...
62	3	635	91	134	...
Total.....		1,137	215	203	12

Table VI shows that the 881 graduates from the schools having all grades together lost, during their 7th and 8th years, 186 terms of work and gained fifty-eight, a net loss of 128, or the equivalent of a loss of a term's work for each group of seven pupils; the 1,137 graduates from intermediate schools, while losing 215 terms of work, gained 203, a net loss of only twelve, the equivalent of a term's work for each group of ninety-four pupils. Hence, had the same rate of loss prevailed in the two kinds of schools, the 1,137 graduates from intermediate schools would have lost 165 terms of work ($128 \div 881 \times 1,137$), or thirteen times as many terms of work as were actually lost by these graduates.

This difference between the number of terms of work lost in schools having all grades and in intermediate schools suggests a wide difference in the two kinds of schools in the chances of losing or gaining a term's work. In schools having all grades, during the 7th and 8th years, three terms of work are lost to one term's work gained, whereas in intermediate schools the terms of work lost and gained are about equal.

This difference in terms of work lost and gained suggests also that

schools having all grades afford small opportunity to children to complete the course of the 7th and 8th years in less than the regular time—four terms, and that intermediate schools afford large opportunities to shorten the course. The difference in such opportunity is reflected in the number of terms required by the foregoing graduates to complete the course of the 7th and 8th years. In schools¹ having all grades 6.58 per cent. did the work in 3 terms; 75.82 per cent. did the work in 4 terms; 14.08 per cent. did the work in 5 terms; 3.52 per cent. did the work in 6 terms. In intermediate schools¹ .97 per cent. did the work in 2 terms; 15.92 per cent. did the work in 3 terms; 68.07 per cent. did the work in 4 terms; 11.17 per cent. did the work in 5 terms; 3.87 per cent. did the work in 6 terms.

Though terms of work lost and gained and the time required to do the last two years of the elementary school are not in themselves measures of efficiency, yet, when all things are taken into account, that school is the most efficient which does most to accelerate the progress of its pupils and which contributes the least to their retardation.

In these respects, the superiority of the intermediate school over schools having all grades is marked. Only 6.58 per cent. of the graduates from schools having all grades completed the last two years of the course ahead of time; this was accomplished by 16.89 per cent. of the graduates from intermediate schools. Further, 17.60 per cent. of the graduates from schools having all grades were retarded in the last two years of their course, while but 15.04 per cent. of the graduates from intermediate schools took more than the regulation time.

To be sure, pupils may be advanced from grade to grade without regard to their attainments. That pupils are not so advanced in intermediate schools is indicated by a study made by Mr. Coleman D. Frank.² Mr. Frank studied the successes and failures of pupils entering in 1910 the February class of the DeWitt Clinton High School. The schools selected were 160, 188, and 10, Manhattan, schools having all grades, and 24 and 62, intermediate schools. These five schools send, as a rule, the largest number of pupils to DeWitt Clinton High School.

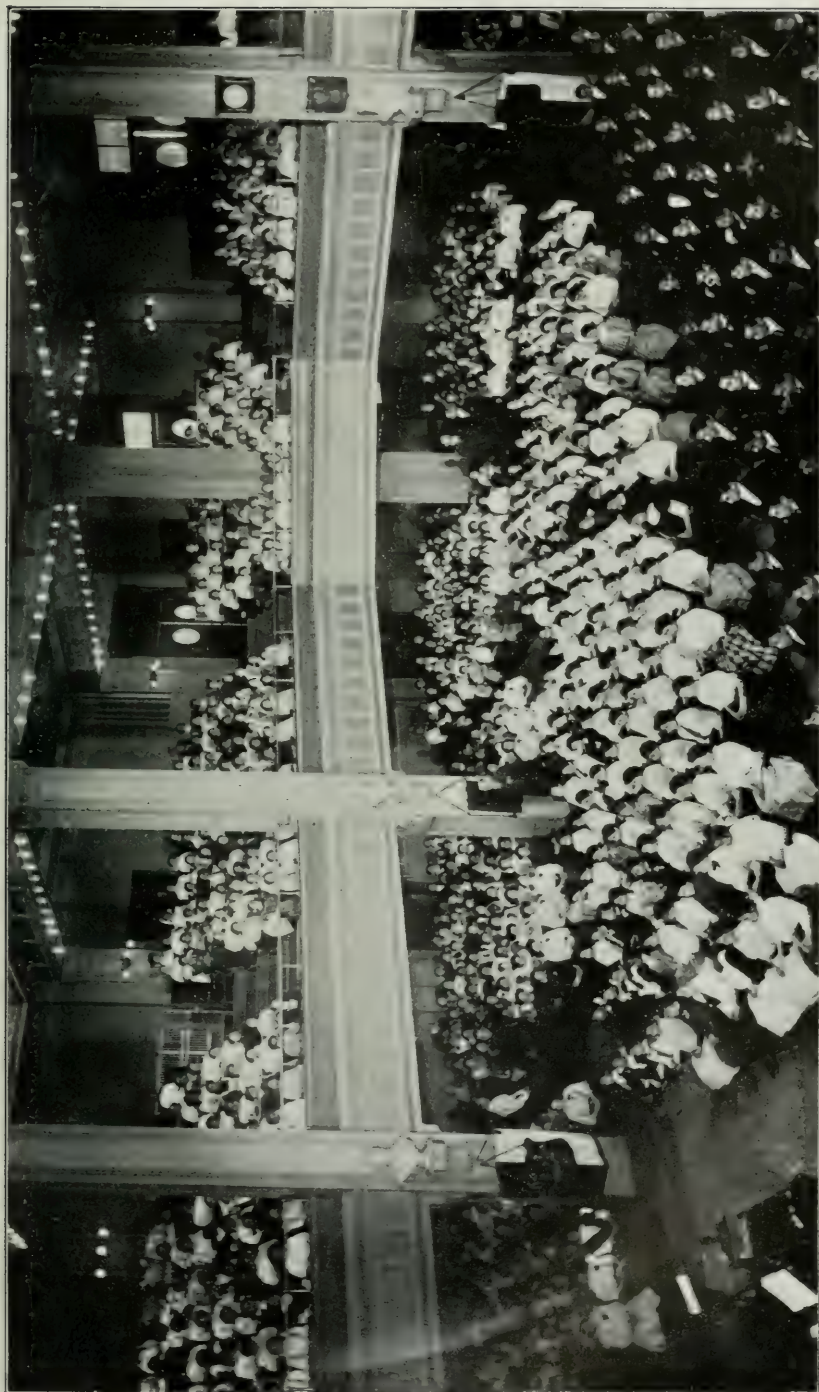
The per cent. of pupils of these schools who succeeded and who failed to do all the work of the first and second terms was:

FIRST TERM

School	Successes	Failures
160	80%	20%
188	69%	31%
10	47%	53%
62	72%	28%
24	67%	33%

¹ Based on special reports by principals of these schools.

² Report of the Committee on Secondary Education, New York City, 1911.



PUPILS IN THE AUDITORIUM OF THE INTERMEDIATE SCHOOL FOR ADOLESCENT CHILDREN AT HESTER AND ESSEX STS., NEW YORK CITY.



SECOND TERM

School	Successes	Failures
160	80%	20%
188	72%	28%
10	52%	48%
62	72%	28%
24	96%	4%

When the schools of the two kinds are grouped, the per cent. of successes and failures is:

FIRST TERM

	Successes	Failures
Schools having all grades	68%	32%
Intermediate schools	70%	30%

SECOND TERM

Schools having all grades	72%	28%
Intermediate schools	82%	18%

It appears that the highest per cent. of successes was attained in the first term by pupils from a school having all grades; in the second term, by pupils from an intermediate school. When the pupils coming from the different schools of each of the two kinds are taken together, the highest per cent. of successes was achieved in both terms by intermediate school graduates—at least partial evidence of the quality of the work done in these schools.

Summary of the foregoing considerations

Schools having all grades, and contributing and intermediate schools have now been compared with reference to five points:

1. Number of pupils leaving the 6B grade without completing this grade.
2. Number of pupils promoted from the 6B grade not entering the 7A grade.
3. Number of pupils leaving the 7A-8B grades without completing these grades.
4. Relative rate of promotions in the 7A-8B grades.
5. Number of terms of work lost and gained by 7A-8B pupils.

The difference in the efficiency of the two kinds of schools with respect to the foregoing points may be summarized as follows:

1. Number of pupils (per 1,000) leaving the 6B grade without completing the grade:
 - a. In schools having all grades..... 90
 - b. In schools having only 1A-6B grades..... 86

2.	Number of pupils (per 1,000) promoted from the 6B grade not entering the 7A grade:	
a.	In schools having all grades.....	49
b.	In intermediate schools	56
3.	Number of pupils (per 1,000) leaving the 7A-8B grades without completing these grades:	
a.	In schools having all grades.....	86
b.	In intermediate schools	68
4.	Relative rate of promotion (per 1,000) in the 7A-8B grades:	
a.	In schools having all grades	836
b.	In intermediate schools	857
5.	Net terms of work (per 1,000) lost by 7A-8B pupils:	
a.	In schools having all grades	145
b.	In intermediate schools	11

Hence, we conclude—

- (a) That fewer pupils leave the 6B classes in schools having only 1A-6B grades by .43 of 1 per cent. than leave the corresponding classes in schools having all grades.
- (b) That more 6B promoted pupils by .67 of 1 per cent. fail to enter the 7A grade of intermediate schools than fail to enter the 7A when they can advance to this grade in their home school.
- (c) That fewer pupils leave the 7th and 8th-year classes of intermediate schools by 1.75 per cent. than leave the corresponding classes of schools having all grades.
- (d) That more 7th and 8th-year pupils are promoted in intermediate schools by 2.04 per cent. than are promoted in schools having all grades.
- (e) That thirteen times as many terms of work are lost by 7th and 8th-year pupils in schools having all grades as are lost by such pupils in intermediate schools.

In only one respect do schools having all grades show a higher efficiency than intermediate schools, and in this respect the higher efficiency is slight. In all other points the intermediate schools show a greater efficiency than schools having all grades.

The data on which the foregoing conclusions rest, with the exception of the data on pupils promoted from the 6B grade and not entering the 7A grade, cover but the February-June term of 1911. These data, however, in the case of 6B losses cover 4,400 pupils; in the case of losses between the 6B-7A grades, 6,270 pupils; in the case of losses from the

7A-8B grades, 12.417; in the case of relative rate of promotion, 12.417; in the case of terms of work lost and gained, 2.018 graduates—numbers sufficiently large and taken from schools operating under conditions sufficiently similar to the conditions surrounding intermediate schools to indicate tendencies. Final conclusions with respect to the educational efficiency of schools having all grades and intermediate schools would, of course, require the collection of data similar to the above for a number of terms.

B—Economy of the Intermediate School.

Education should be conducted as economically as possible. Hence in carrying on any given kind of school work, the expense of different ways of accomplishing the same end should be considered.

Any difference in the expense of schools having all grades and intermediate schools is due almost exclusively to differences in (1) the number of schoolrooms needed; (2) the number of teachers required; and (3) the supplies and equipment needed to instruct a given number of 7th and 8th-year pupils. Comparisons with respect to these three points will, therefore, bring out the difference between the cost of instructing 7th and 8th-year pupils in these two kinds of schools.

The schools having all grades selected for the purpose of these comparisons are, with few exceptions, the same as those selected for the foregoing comparisons with respect to educational efficiency. Their selection, however, does not imply the suggestion that the 7A-8B pupils in them could be brought into intermediate schools. Hence, the comparisons to be made will merely indicate what the probable saving would be where conditions are such that 7A-8B children in schools having all grades can be brought into intermediate schools.

Difference in the number of schoolrooms required

To instruct 7th and 8th-year pupils at least four different kinds of schoolrooms are needed: regular classrooms, manual training shops, cooking rooms, and gymnasiums.

Difference in number of regular classrooms required

Table VII shows for the February-June term of 1911, the enrollment in 7A-8B classes in schools having all grades, the number of regular classrooms used in instructing these classes, and the average number of 7A-8B pupils per regular classroom. The table also shows the same facts for intermediate schools 24, 159, and 62. (See page 482.)

The average number of 7A-8B pupils per classroom varies, as shown by Table VII, in the foregoing schools from thirty-five to fifty-two. These variations are due to differences in size of classrooms and to the particular number of 7A-8B pupils to be instructed.

Table VII—Class-Rooms Required

SCHOOLS HAVING ALL GRADES (1A-SB)					INTERMEDIATE SCHOOLS (7A-SB)				
Schools	Districts	7A-SB Enrollment Feb.-June Term, 1911	Number of Regular Classrooms	Average Number of Pupils per Classroom	Schools	Districts	7A-SB Enrollment Feb.-June Term, 1911	Number of Regular Classrooms	Average Number of Pupils per Classroom
72	17	515	11	46	24	21	1,422	28	50
83	17	741	15	49	159	20	1,420	32	44
168	17	634	13	48	62	3	2,602	59	44
171	17	495	12	41	...	..	...	...	...
68	21	305	8	38	...	..	...	...	...
90	21	424	12	35	...	..	...	...	...
119	21	474	12	39	...	..	...	...	...
22	4	783	18	43	...	..	...	...	...
31	4	294	7	42	...	..	...	...	...
110	4	423	8	52	...	..	...	...	...
147	4	962	23	41	...	..	...	...	...
34	3	410	10	41	...	..	...	...	...
7	2	513	12	42	...	..	...	...	...
Total.....	.....	6,973	161	43.31	Total.....	.....	5,444	119	45.75

These figures were taken from reports to the Committee on School Inquiry, June, 1911, and from principals' monthly reports for June, 1911, on file at the office of the Board of Education.

It will also be observed that the average number of pupils per classroom in schools having all grades is 43.31, in intermediate schools, 45.75—an average difference in favor of the intermediate school of 2.44 pupils. Hence, had the average number of pupils per classroom been the same in the two kinds of schools, to provide for the 6,973 7A-8B pupils in schools having all grades would have required only 152.42 classrooms ($6,973 \div 45.75$) instead of 161, or 8.58 fewer than were used.

It therefore appears that when 7A-8B pupils are brought together in intermediate schools the number of regular classrooms required is 5.33 per cent. ($8.58 \div 161$) less than when 7th and 8th-year pupils are taught in schools having all grades.¹

Difference in the number of manual training shops required

Table VIII shows, as of April, 1911, for schools having all grades the number of single shops, the number of 7th and 8th-year pupils instructed in each shop, and the average number instructed per shop. The table also shows the same facts for intermediate schools 24 and 62. Intermediate school 159 is a girls' school, and hence has no shop.

Table VIII—Shops Required—Schools Having All Grades (1A-8B)

Schools	Districts	Number of Single Shops	Number of 7th & 8th-Year Pupils as of April, 1911, Instructed in Each	Average No. 7th & 8th-Year Pupils Instructed per Shop
20	6	1	438	
21	1	1	161	
23	1	1	190	
25	6	1	405	
29	1	1	31	
34	3	2	408	
44	1	1	74	
64	7	1	501	
79	6	2	334	
83	17	2	728	
114	1	1	257	
147	4	2	527	
160	5	2	569	
188 B	7	1	322	
Total,		19	4,945	260

¹It will be observed that the average number of pupils per class-room in both schools having all grades and intermediate schools is high. Because comparisons are made under these conditions, the inference should not be drawn that we favor overcrowded class-rooms. We favor the opposite. The comparisons are made on the assumption that whatever the average number of pupils per class-room in theory, in practice, the difference in the actual number of pupils per class-room in schools having all grades and in intermediate schools would be similar to the difference found for the February-June term, 1911.

Table IX shows, as of April, 1911, for schools having all grades, the number of single shops, the total number of pupils instructed in each shop, and the average number instructed per shop. The table also shows the same facts for intermediate schools 24 and 62. (See page 485.)

In schools having all grades the average number of all pupils instructed per shop was 289; in intermediate schools, 358—an average difference in favor of intermediate schools of sixty-nine pupils. Had the same average prevailed as prevailed in intermediate schools, to provide for the total of 5,501 pupils in schools having all grades, only 15.37 shops ($5,501 \div 358$) instead of nineteen would have been required, or 3.63 fewer than were used.

When, therefore, manual training is extended to other than 7th and 8th-year pupils, thus increasing the total use of shops, only 19.11 per cent. ($3.63 \div 19$) fewer shops are required in intermediate schools than in schools having all grades, to provide for the same number of pupils.¹

Hence, intermediate schools require 27.32 per cent. (see above) fewer shops than schools having all grades, only when the instruction of 7th and 8th-year pupils alone is taken into account.

Shops Required—Intermediate Schools (7A-8B)

Schools	Districts	Number of Single Shops	Number of 7th & 8th-Year Pupils as of April, 1911, Instructed in Each	Average Number 7th & 8th-Year Pupils Instructed per Shop
24	21	3	1,368	
62	3	4	1,138	
Total,		7	2,506	358

These figures were taken from the Teachers' Schedule of Assignment and from the Principals' Statement of Shop Work, on file at the office of the Board of Education.

In schools having all grades the average number of 7th and 8th-year pupils instructed per shop is 260; in intermediate schools, 358—an average difference in favor of intermediate schools of ninety-eight pupils. Had the same average prevailed as prevailed in intermediate schools, to provide for the 4,945 7th and 8th-year pupils in schools having all grades, only 13.81 shops ($4,945 \div 358$) instead of nineteen would have been required, or 5.19 fewer than were used. It therefore requires 27.32 per cent. ($5.19 \div 19$) fewer shops to care for a given number of 7th and 8th-grade pupils in intermediate schools than to care for the same number of such pupils in schools having all grades.

Manual training is regularly taught only in the 7th and 8th years. The Board of Superintendents, however, may authorize the giving of such instruction to other than 7th and 8th-year pupils. This is done

¹ See closing sentence of this section, p. 488.



WORKSHOP, P. S. 62 (INTERMEDIATE SCHOOL).

In schools having all grades the average number of all pupils instructed per shop was 289; in intermediate schools, 358. Fewer shops are required in intermediate schools than in schools having all grades to provide for the same number of pupils.

particularly in case of over-age boys in the 6A and 6B grades. Manual training shops may consequently be used by other than 7th and 8th-year pupils.

Table IX—Shops Required—Schools Having All Grades (1A-8B)

Schools	Districts	Number of Single Shops	Total Number of Pupils as of April, 1911, Instructed in Each Shop	Average Number Instructed per Shop
20	6	1	438	
21	1	1	180	
23	1	1	190	
25	6	1	405	
29	1	1	63	
34	3	2	641	
44	1	1	127	
64	7	1	501	
79	6	2	483	
83	17	2	728	
114	1	1	332	
147	4	2	527	
160	5	2	564	
188 B	7	1	322	
Total,		19	5,501	289

Shops Required—Intermediate Schools (7A-8B)

Schools	Districts	Number of Single Shops	Total Number of Pupils as of April, 1911, Instructed in Each Shop	Average No. Instructed per Shop
24	21	3	1,368	
62	3	4	1,138	
Total,		7	2,506	358

These figures were taken from the same sources as the figures in Table VIII.

Difference in the number of cooking rooms required

Owing to a lack of uniformity in the method of using cooking rooms, it is impossible to compare intermediate schools and schools having all grades with respect to the number of 7th and 8th-year pupils taught per cooking room. In schools such as 13, 71, 72, and 137, Manhattan, the group method of instruction is followed—*i. e.*, instead of the pupils doing the work themselves, they observe cooking done in whole or in part by the teacher. In some schools, such as 90, 159, and 188 G, due to the lack of adequate individual equipment, children are given considerable theory; this reduces by one-half or one-third the amount of actual cooking. In other schools, the entire time assigned to the study is given to cooking. It is, however, possible to compare schools having all grades

and intermediate schools with reference to the periods per week cooking rooms are used.

Table X shows, as of April, 1911, for schools having all grades the number of cooking rooms, the number of single periods each cooking room was used per week for the instruction of 7th and 8th-year pupils; and the average number of single periods per week in use. The table also shows the same facts for intermediate schools 62 and 159.

Table X—Cooking Rooms Required—Schools Having All Grades (1A-8B)

Schools	Districts	Number of Single Cooking Rooms	Single Periods Used per Week for 7th & 8th-Year Pupils, April, 1911	Average No. Single Periods Used per Week for 7th & 8th-Year Pupils
1	1	1	28	
4	5	1	30	
21	1	1	12	
23	1	1	26	
31	4	1	28	
63	6	1	34	
68	21	1	26	
90	21	1	28	
91	6	1	30	
110	4	1	30	
119	21	1	30	
168	17	1	27	
188 G	7	1	24	
Total,		13	353	27.15

Cooking Rooms Required—Intermediate Schools (7A-8B)

Schools	Districts	Number of Single Cooking Rooms	Single Periods Used per Week for 7th & 8th-Year Pupils, April, 1911	Average No. Single Periods Used per Week for 7th & 8th-Year Pupils
62	3	2	63	
159	20	2	68	
Total,		4	131	32.75

These figures were taken from the Teachers' Schedule of Assignment and from Principals' Statement of Cooking, on file at the office of the Board of Education.

Table X shows that in schools having all grades, cooking rooms were used in the instruction of 7th and 8th-year pupils on the average 27.15 single periods per week; in intermediate schools, 32.75—an average difference in favor of intermediate schools of 5.60 periods. Had the same average prevailed as prevailed in intermediate schools, the 353 periods of instruction given in schools having all grades could have been



COOKING CLASS IN INTERMEDIATE SCHOOL.

Fewer cooking rooms are required to provide for a given number of seventh and eighth year pupils in intermediate than to provide for the same number of such pupils in schools having all grades.

given in 10.78 cooking rooms ($353 \div 32.75$) instead of thirteen, or in 2.22 less than were used.

It therefore appears that 17.10 per cent. ($2.22 \div 13$) fewer cooking rooms are required to provide for a given number of 7th and 8th-year pupils in intermediate schools than to provide for the same number of such pupils in schools having all grades.

Like manual training, cooking is regularly taught only in the 7th and 8th years. The Board of Superintendents may, however, authorize the giving of cooking to other pupils. This is done particularly in case of over-age girls in the 6A and 6B grades. Cooking rooms may consequently be used by other than 7th and 8th-year pupils.

Table XI shows, as of April, 1911, for schools having all grades, the number of cooking rooms, the total number of single periods each cooking room was used per week, and the average number of single periods per week in use. This table also shows the same facts for intermediate schools 62 and 159.

Table XI—Cooking Rooms Required—Schools Having All Grades (1A-8B)

Schools	Districts	Number of Single Cooking Rooms	Total Number of Single Periods Used per Week for All Pupils	Average Number Single Periods Used per Week for All Pupils
1	1	1	35	
4	5	1	30	
21	1	1	30	
23	1	1	30	
31	4	1	30	
63	6	1	34	
68	21	1	28	
90	21	1	32	
91	6	1	30	
110	4	1	30	
119	21	1	30	
168	17	1	30	
188 G	7	1	30	
Total,		13	399	30.69

Cooking Rooms Required—Intermediate Schools (7A-8B)

Schools	Districts	Number of Single Cooking Rooms	Total Number of Single Periods Used per Week for All Pupils	Average Number Single Periods Used per Week for All Pupils
62	3	2	63	
159	20	2	68	
Total,		4	131	32.75

These figures are taken from the same sources as the figures in Table X.

Cooking rooms are used on the average in schools having all grades a total of 30.69 single periods per week; in intermediate schools, 32.75—an average difference in favor of intermediate schools of 2.06 single periods. Had the same average prevailed in the two kinds of schools the total of 309 periods of instruction given in schools having all grades could have been given in 12.18 cooking rooms ($309 \div 32.75$) instead of thirteen, or in .82 less than were used.

When the total use of cooking rooms in intermediate schools is compared with the total use in schools having all grades it appears that only 6.31 per cent. ($.82 \div 13$) fewer are required in intermediate schools than in schools having all grades to instruct the same number of pupils.

Hence, it is only when the instruction of 7th and 8th-year pupils is taken into account that intermediate schools require 17.10 per cent. (see pages 486-7) fewer cooking rooms than schools having all grades.

The foregoing difference of 27.32 per cent. in the number of shops and 17.10 per cent. in the number of cooking rooms needed by intermediate schools and by schools having all grades, to instruct a given number of 7th and 8th-year pupils, is due to the fact that shops and cooking rooms in the intermediate schools are kept in use practically the entire school day. In consequence, they cannot be used to instruct pupils below the 7A grade, even were it practical to send such pupils to an intermediate school merely for manual training and cooking. To provide for the pupils below the 7A grade now instructed in schools having all grades would, therefore, require shops and cooking rooms in addition to those needed in the intermediate schools. Hence, in considering the saving in shops and cooking rooms that might be effected by bringing 7A-8B pupils into intermediate schools, the use of shops and cooking rooms to instruct other than 7th and 8th-year pupils in schools having all grades should be taken into account (see the first note, page 400). Moreover, should intermediate schools be made universal and manual training and cooking be made general for over-age 6A-6B pupils, the saving in shops and cooking rooms might be less than the above estimates, even when the instruction of pupils below the 7A is taken into account, because under such conditions, to provide manual training and cooking for such over-age pupils might require relatively more shops and cooking rooms than under present conditions.

Difference in the number of gymnasiums required

Table XII gives the number of gymnasiums in schools having all grades, the number of single periods per week each was used during the February-June term, 1911, for the instruction of 7th and 8th-year pupils, and the average number of single periods per week in use. The table also shows the same facts for intermediate schools 24, 159, and 62.

Table XII—Gymnasiums Required

SCHOOLS HAVING ALL GRADES (1A-SIB)				INTERMEDIATE SCHOOLS (7A-SIB)			
Schools	Districts	Number of Gymnasiums	Single Periods Used per Week for 7th and 8th-Year Pupils	Average No. of Single Periods Used per Week for 7th and 8th-Year Pupils	Schools	Districts	Number of Gymnasiums
1	1	1	36	.....	24	21	1
4	5	1	45	.....	159	20	1
23	1	1	36	.....	62	3	2
44	1	1	16	.....	.....	.....	.....
91	6	1	40	.....	.....	.....	.....
114	1	1	32	.....	.....	.....	.....
Total.....		6	205	34.17	Total.....	.....	4
							167
							41.75

These figures were taken from a special report made by the City Superintendent of Schools to the Committee on School Inquiry, dated July 10, 1911.

Gymnasiums, it appears, are used in schools having all grades on the average 34.17 single periods per week; in intermediate schools, 41.75—an average difference in favor of intermediate schools of 7.58 single periods. Had the same average prevailed in the two kinds of schools the total of 205 periods of instruction in schools having all grades could have been given in 4.91 gymnasiums ($205 \div 41.75$) instead of six, or in 18.17 per cent. fewer gymnasiums than were used.

Summary

In view of the foregoing data, it appears that to provide for a given number of 7A-8B pupils in intermediate schools requires:

- 5.33 per cent. fewer regular classrooms
- 27.32 per cent. or 19.11 per cent. fewer shops¹
- 17.10 per cent. or 6.31 per cent. fewer cooking rooms,¹ and
- 18.17 per cent. fewer gymnasiums

than to provide for the same number of such children in schools having all grades.

The saving in money, represented by these differences in the number of rooms required in intermediate schools and in schools having all grades, is brought out, if these differences are considered in relation to caring for 20,000 7A-8B pupils.² On the basis of the rooms required to care for the foregoing 7A-8B pupils in schools having all grades, and in intermediate schools, to provide for 20,000 such pupils, equally divided between boys and girls, there would be needed in:

	Schools Having All Grades	Intermediate Schools	Difference in Favor of Inter- mediate Schools
Regular classrooms.....	462	438	24
Manual training shops...	39	28	11 or 4 ¹
Cooking rooms.....	35	27	8 or 4 ¹
Gymnasiums.....	27	21	6
	563	514	49 or 38 ¹

To care for 20,000 7A-8B pupils, there is a difference of forty-nine in the number of rooms needed in these two kinds of schools—a difference of 8.70 per cent. ($49 \div 563$) in favor of intermediate schools; when

¹ According as the use of shops and cooking rooms in schools having all grades to instruct other than 7th and 8th-grade pupils is disregarded or taken into account.

² This illustration does not imply the suggestion that 20,000 7A-8B pupils out of the 100,000 now in the schools of New York could be brought into intermediate schools. With the time at the disposal of the Committee on School Inquiry, it is impossible to determine the exact number that could be advantageously segregated in intermediate schools.

the use of shops and cooking rooms in schools having all grades to instruct other than 7th and 8th-year pupils is taken into account, there is a difference of thirty-eight or 6.75 per cent. in the rooms required. This difference, at the least of thirty-eight rooms, represents not less than \$400,000¹ in original investment, and an annual difference of 6.88 per cent. in cost of upkeep and operating expenses.

Difference in the number of teachers required

In the instruction of 7th and 8th-year pupils, three kinds of teachers are employed: regular class teachers, manual training teachers, and cooking teachers.

Difference in the number of regular class teachers required

Table XIII shows, for the February-June term of 1912, the enrollment of 7A, 7B, 8A, and 8B classes in schools having all grades, the number of regular class teachers in each grade, and the average number of pupils per teacher. The table also shows the same facts for intermediate schools 24, 159, and 62. (See page 492.)

It will be observed that the number of pupils per teacher in schools having all grades ranges from thirty-two to fifty-five, and that there were at least twenty over-size classes—classes having an enrollment of more than fifty pupils.

The average number of pupils per regular class teacher in schools having all grades is 43.31; in intermediate schools, 45.75—an average difference in favor of intermediate schools of 2.44 pupils. Hence, had the average number of pupils per regular class teacher been the same as in intermediate schools, the 6,973 7A-8B pupils in schools having all grades would have been instructed by 152.42 teachers ($6,973 \div 45.75$) instead of 161, or by 8.58 fewer teachers than were engaged. Further, had these 6,973 pupils been in intermediate schools, it would have been possible, without increasing the number of teachers, to have reduced the foregoing over-size classes, whereas in schools having all grades to have done this would have required additional teachers.

It therefore appears that to instruct the same number of 7A-8B pupils, intermediate schools require fewer regular class teachers than schools having all grades by 5.33 per cent. ($8.58 \div 161$). Also that classes can be made more uniform in size. This tends to equalize opportunity and to add to the effectiveness of the instruction.

¹The estimated cost of a thirty-nine-room building is \$330,000; of the site, \$70,000. These estimates are based on the cost of new buildings as given in the Corporate Stock Requirements submitted by the Board of Education, March, 1911, and on the cost of sites, as given in the annual Financial and Statistical Report of the Board of Education for 1910.

Table XIII—Teachers Required—Schools Having All Grades (1A-8B)

Schools	Districts	7A GRADE			7B GRADE			8A GRADE			8B GRADE			GRAND TOTAL		
		Enroll- ment	Regular Teachers	Pupils per Teacher	Enroll- ment	Regular Teachers	Pupils per Teacher	Enroll- ment	Regular Teachers	Pupils per Teacher	Enroll- ment	Regular Teachers	Pupils per Teacher	Enroll- ment	Regular Teachers	Pupils per Teacher
72	17	152	3	50	142	3	47	135	3	45	86	2	43	515	11	46
83	17	249	5	49	220	4	55	142	3	47	130	3	43	741	15	49
168	17	212	4	53	165	4	41	147	3	49	110	2	55	634	13	48
171	17	145	4	36	121	3	40	134	3	44	95	2	47	495	12	41
68	21	93	2	46	81	2	40	67	2	33	64	2	32	305	8	38
90	21	110	3	36	140	4	35	106	3	35	68	2	34	421	12	35
119	21	138	4	34	122	3	40	127	3	42	87	2	33	471	12	39
22	4	215	5	43	227	6	37	176	4	44	165	3	55	783	18	43
31	4	79	2	39	80	2	40	87	2	43	48	1	48	294	7	42
110	4	107	2	53	108	2	54	110	2	55	98	2	49	423	8	52
147	4	306	7	43	256	6	42	210	5	42	190	5	38	962	23	41
34	3	103	2	51	74	2	37	134	4	33	99	2	49	410	10	41
7	2	298	6	49	215	6	35	....	....	....	....	....	....	513	12	42
Total		2,207	49	45.05	1,951	47	41.51	1,575	37	42.57	1,240	28	44.29	6,973	161	43.31

Teachers Required—Intermediate Schools (7A-8B)

Schools	Districts	7A GRADE			7B GRADE			8A GRADE			8B GRADE			GRAND TOTAL		
		Enroll- ment	Regular Teachers	Pupils per Teacher	Enroll- ment	Regular Teachers	Pupils per Teacher	Enroll- ment	Regular Teachers	Pupils per Teacher	Enroll- ment	Regular Teachers	Pupils per Teacher	Enroll- ment	Regular Teachers	Pupils per Teacher
24	21	454	9	50	375	7	53	310	6	51	283	6	47	1,422	28	50
159	20	441	10	44	375	9	41	332	7	47	272	6	45	1,420	32	44
62	3	666	15	44	640	15	42	622	14	44	674	15	44	2,602	59	44
Total		1,561	34	45.91	1,390	31	44.84	1,264	27	46.81	1,229	27	45.52	5,444	119	45.75

These figures were taken from the reports to the Committee on School Inquiry, June, 1911, and from a special report by the City Superintendent of Schools, dated July 10, 1911

Difference in the number of manual training teachers required

Table XIV shows, as of April, 1911, for schools having all grades, the number of 7th and 8th-year pupils instructed in manual training, the number of manual training teachers giving their whole time to the instruction of 7th and 8th-year pupils, and the average number of 7th and 8th-year pupils per teacher. The table also shows the same facts for intermediate schools 24 and 62.

Table XIV—M. T. Teachers Required—Schools Having All Grades (1A-8B)

Schools	Districts	7th & 8th-Year Pupils Instructed as of April, 1911	Number of Manual Training Teachers Giving Whole Time to 7th & 8th-Year Pupils	Average Number of 7th and 8th-Year Pupils per Teacher
20	6	438	1.00	
21	1	161	.46	
23	1	190	.51	
25	1	405	.96	
29	1	31	.17	
34	3	408	1.38	
44	1	74	.23	
64	7	501	1.00	
79	6	334	1.40	
83	8	728	1.93	
114	1	257	.80	
147	4	527	1.94	
160	5	569	1.94	
188 B	7	322	.89	
Total,		4,945	14.61	338

M. T. Teachers Required—Intermediate Schools (7A-8B)

Schools	Districts	7th & 8th-Year Pupils Instructed as of April, 1911	Number of Manual Training Teachers Giving Whole Time to 7th & 8th-Year Pupils	Average Number of 7th and 8th-Year Pupils per Teacher
24	21	1,368	3.00	
62	3	1,138	3.80	
Total,		2,506	6.80	368

These figures were taken from the Teachers' Schedule of Assignment and from the Principals' Statement of Shop Work, on file at the office of the Board of Education.

The average number of 7th and 8th-year pupils per manual training teacher in schools having all grades is 338; in intermediate schools, 368—an average difference of thirty pupils. Hence, had the same number of pupils been instructed per manual training teacher in schools having

all grades as were instructed in intermediate schools, to have taught manual training to the 4.945 7th and 8th-year pupils in schools having all grades would have required 13.44 manual training teachers ($4.945 \div 368$) instead of 14.61, or 1.17 fewer than were engaged.

It therefore appears that intermediate schools need fewer manual training teachers than schools having all grades by 8.01 per cent. ($1.17 \div 14.61$) to give shopwork to the same number of 7th and 8th-year pupils.¹

Difference in the number of cooking teachers required

Owing to differences in cooking instruction, it is impossible to compare the number of cooking teachers needed, in schools having all grades and intermediate schools, to instruct the same number of 7th and 8th-year pupils. Cooking classes are, however, organized and conducted in the same way as classes in manual training, and the same general conditions affect the size of class and the number of pupils per teacher.

It is, therefore, fair to infer that were it possible to compare the number of cooking teachers required, in schools having all grades and in intermediate schools, to teach a given number of 7th and 8th-year pupils, the same difference would be found in the number of cooking teachers needed as is found in the number of manual training teachers required—that is, it is but fair to infer that intermediate schools require fewer cooking teachers than schools having all grades by 8.01 per cent. to give cooking to the same number of 7th and 8th-year pupils.

Summary

In view of the foregoing data, it appears that to instruct a given number of 7A-8B pupils in intermediate schools, in comparison with instructing the same number of such pupils in schools having all grades, requires:

- 5.33 per cent. fewer regular class teachers
- 8.01 per cent. fewer manual training teachers
- 8.01 per cent. fewer cooking teachers

The saving in money, represented by these differences in the number of teachers required in intermediate schools and in schools having all grades, is brought out, if these differences are considered in relation to instructing 20,000 7A-8B pupils.² On the basis of the teachers required to instruct the foregoing 7A-8B pupils in schools having all grades,

¹ The extension of manual training and cooking to over-age 6A-6B pupils might, as stated above, lessen the estimated saving in manual training and cooking rooms, but such an extension would not affect the estimated saving in manual training and cooking teachers, because this extension would in nowise affect the number of teachers required to instruct a given number of 7A-8B pupils in the two kinds of schools.

² See second note on page 490.

and to instruct such pupils in intermediate schools, to provide for 20,000 7A-8B pupils, equally divided between boys and girls, there would be required in:

	Schools Having All Grades	Intermediate Schools	Difference in Favor of Intermediate Schools
Regular class teachers...	462	438	24
Manual Tr. teachers....	30	28	2
Cooking teachers.....	30	28	2
	522	494	28

In caring for 20,000 7A-8B pupils, there is a difference of twenty-eight in the number of teachers required in these two kinds of schools—a difference of 5.36 per cent. ($28 \div 522$) in favor of intermediate schools. This difference of twenty-eight teachers represents an annual difference in cost of not less than \$35,000.¹

Difference in the amount of supplies and equipment required

The term "supplies" is used by the Board of Education to include all material aids to instruction. A distinction, however, should be drawn between supplies which are directly consumed by pupils—for example, paper pads, pencils, ink, textbooks, etc.—and supplies which are to a greater or less extent permanent—for example, maps, globes, science apparatus, gymnasiums, cooking rooms, and shop equipment.

It is obvious that no saving would be effected in supplies which are directly consumed by bringing 7A-8B pupils into intermediate schools. It is, however, equally obvious that great saving would thereby be effected in supplies which are to a greater or less extent permanent. The saving on equipment in shops, cooking rooms, and gymnasiums would be in direct relation to the difference in the number of these required in intermediate schools and in schools having all grades to instruct a given number of 7A-8B pupils. Hence, there would be a saving of 19.11 per cent. or 27.32 per cent.² on equipment for shops; of 6.31 per cent. or 17.10 per cent.³ on equipment for cooking rooms—according as the use of shops and cooking rooms in schools having all grades to instruct other than 7th and 8th-year pupils is taken into account or disregarded—and a saving of 18.17 per cent.⁴ on equipment for gymnasiums.

¹ Estimated on the basis of the average annual salary of 7A-8A, 8B, and of manual training and cooking teachers, as stated in the Board of Education's Estimate, 1912.

² See pages 483-85.

³ See pages 485-88.

⁴ See pages 488-90.

It was impossible to obtain data on what is spent for 7th and 8th-year pupils on such permanent equipment as maps, globes, science apparatus, etc. Hence, it is impossible to estimate what saving would be effected by bringing 7A-8B pupils into intermediate schools. This saving would, however, be no inconsiderable sum.

Summary of the foregoing considerations

Schools having all grades and intermediate schools have been compared with respect to economic efficiency on three points:

1. The number of schoolrooms required.
2. The number of teachers required.
3. The amount of equipment required.

It has been shown:

- (a) That intermediate schools require fewer rooms by 8.70 per cent. or by 6.75 per cent.¹
- (b) That intermediate schools require fewer teachers by 5.36 per cent.
- (c) That intermediate schools require less equipment in shops by 19.11 per cent. or by 27.32 per cent.,¹ in cooking rooms by 6.31 per cent. or by 17.10 per cent.,¹ and in gymnasiums by 18.17 per cent.

In view of these differences in requirements, and hence differences in cost, could 20,000 7A-8B pupils be brought into intermediate schools² the immediate saving would at the very least be sufficient to provide for the erection of a school building of thirty-nine rooms, and for the annual total cost of operating such a school.³

C—Educational Opportunities Afforded by the Intermediate School

The intermediate school should not be judged, however, only by what it now is, but also by what it might become.

Intermediate schools are, at the present time, conducted in most ways like schools having all grades. The two kinds of schools have the same course of study for the 7th and 8th years, the same departmental organization, and practically the same methods of classifying and promoting pupils. In a word, the intermediate school, with slight modifications, is merely an enlargement of the 7th and 8th grades of schools having all classes. But to limit the activities of the intermediate school in this way is to fail to take advantage of important educational opportunities it may be made to afford.

¹ According as the use of shops and cooking rooms in schools having all grades to instruct other than 7th and 8th-year pupils is disregarded or taken into account.

² See second note, page 490.

³ See note on page 491 and first note on page 495.



SEWING ROOM IN INTERMEDIATE SCHOOL, P. S. 62.

The intermediate school affords a splendid opportunity to adapt the instruction to the two sexes and to the requirements of high schools and vocational schools.

These educational opportunities suggest themselves when we consider the wisdom of offering to 7th and 8th-year pupils more than one course of study; of a better adaptation of the instruction to the two sexes; of a more thoroughgoing classification of pupils; of a more just method of promotion, and of a better adaptation to the needs of 7th and 8th-year pupils of certain general features of school organization.

Opportunity to offer different courses of study

The wisdom of offering more than one course of study in the elementary schools of New York City to 7th and 8th-year pupils has been discussed elsewhere.¹ By reason of the large number of pupils in attendance in the same grade, the intermediate school affords peculiar opportunity for different courses of study. As is pointed out in our discussion on the course of study, these courses meet the needs of three classes of pupils: (a) those who are planning to go to an "academic" or "general" high school, and perhaps to college; (b) those who look forward to entering a vocational high school; and (c) those who intend, as soon as they are fourteen years old, to enter an elementary vocational school, or who must leave or choose to leave school as soon as they are legally exempt from further school attendance. In all these courses the separate educational needs of the two sexes, as well as their common needs, should be provided for, as is indicated in the next section.

Opportunity to adapt the instruction to the two sexes and to the requirements of high schools and vocational schools

The differences between boys and girls point to the necessity of differences between the instruction they should receive. The desirability of making the instruction of boys and girls different is already recognized in providing for boys manual training, and for girls cooking and sewing; also in providing different physical training for boys and for girls. This differentiation of work, however, should be carried much further in the elementary school than it now is. The intermediate school affords particular opportunity to differentiate, according to the needs of the two sexes, both in the general scope of the different courses of study and in their details.

Good opportunity is also afforded by the intermediate school to experiment with courses of study, to the end that these may on the one hand be adapted to the capacities, desires, and intentions of different groups of children, and may on the other hand be brought to articulate so closely with the courses in high schools and vocational schools, that pupils graduating from the intermediate school are well prepared to

¹ For discussion of the necessity of more than one course of study, see Report on Promotion, Non-Promotion and Part-Time, Vol. I.

profit by and do the work of the particular kind of subsequent school they may enter.

Again, by reason of the number of children in intermediate schools who are approaching the time when they must choose a pursuit, and who need advice that they may choose wisely, and by reason of the number of teachers having to deal only with such children, the intermediate school affords the best possible opportunity to experiment and to develop systematic vocational guidance.

Hence, in judging of the worth of the intermediate school the opportunity it affords to adapt the instruction to the needs of the two sexes, and to the needs of different groups of children, and to lay the foundation for work in a subsequent school should be given serious consideration.

Opportunity to classify pupils according to ability

In schools having all grades, it is impracticable, by reason of numbers, to group pupils within a particular grade, to any considerable extent, according to ability. Children of widely different capacity must, in consequence, work in the same class, with the inevitable result that one part of the class is kept comfortably busy; a second part has too much to do, and a third part too little.

But, so far as possible, every child has the right to work at all times up to his capacity. The intermediate schools can supply such conditions of work more easily than other schools; for, by reason of numbers, the pupils of a given grade may at least be grouped as slow pupils, normal pupils, and exceptionally bright pupils, and the instruction adapted to the requirements of each group.

Further, in schools having all grades, when a pupil is not promoted, he must, because of the relatively few failing in a given grade, take the work over with pupils who are in the class for the first time. The pupil consequently has no opportunity to pay special attention to the particular subjects in which he has failed. In the intermediate school, however, it is possible, by reason of numbers, to bring together into one class children who have failed in the same branches. Such a grouping affords opportunity to help pupils where there is need, and hence to strengthen them where they are weak.

Opportunity for promotion by studies

In schools having all classes, children are promoted by grades. Hence, if a pupil is not advanced, he must go over a second time all the work of the grade instead of having to repeat only the studies in which he is deficient.

The pupil has the right, so far as possible, to be advanced as rapidly or as slowly as his several abilities permit or require. His advancement in all studies ought, therefore, not to be conditioned by his weakness in

certain branches. Whether promotion by grades is necessarily inherent in schools having all grades should be made the subject of consideration. However that may be, the intermediate school can readily adopt such a system of promotion that each child may go forward whenever he is prepared to advance. That is, the intermediate school can be so organized that promotions are made by studies rather than by grades. The administrative difficulties of promotion by studies should be no greater in the intermediate school than they are in the high school; and no one would think of promoting high-school pupils otherwise than by subjects.

Opportunity to adapt to the needs of 7th and 8th year pupils certain general features of school organization

It is well understood that at about the age of twelve or fourteen years boys and girls need a kind of care and discipline different from the care and discipline of younger children. In schools having all classes, relatively the same organization prevails throughout the school. To be sure, certain modifications are made in favor of 7th and 8th-year pupils—for example, departmental teaching—but these modifications must necessarily be few. The intermediate school, however, having to do with 7th and 8th-year pupils, can adapt its organization to the particular needs of children passing from late childhood into the period of early youth.

The intermediate school may be so organized that larger place is given than it is possible to give in the average size school having all grades to athletics and competitive games, to club work, and to social activities; larger opportunity can be given for pupil self-government; larger individual freedom of thought and action can also be permitted; in a word, the intermediate school can be so organized, such opportunity can be given for the expression of spontaneity, and for the exercise of initiative, judgment, and self-direction, that school life will make a stronger appeal to 7th and 8th-year pupils than it now does, as a rule in most schools. The need of this stronger appeal is revealed in the fact that 4,218 7A-8B boys and 3,948 7A-8B girls, a total of 8,166 7A-8B pupils, left the elementary schools of the City of New York during the spring term of 1911 without completing these grades.¹

Probable effects of realizing the foregoing possibilities

Certain of the foregoing possibilities are now being realized, to a limited extent, in intermediate schools—notably in Public School Number 62; but should different courses of study be introduced; should a differentiation of the instruction for boys and girls be made and the courses

¹From reports made to the Committee on School Inquiry, June, 1911.

of study be made to articulate with high schools and vocational schools; should pupils within a grade be grouped according to ability; should promotion by studies be inaugurated; should an organization be developed, that is adapted to the particular needs of 7th and 8th-year pupils, and should the effects of these innovations be studied carefully for a series of terms, it would be found, it is believed, that such an intermediate school would not only be far more efficient in caring for 7th and 8th-year pupils than a school having all grades, but also far more efficient than are the intermediate schools already established.

D—Location and Establishment

Finally, there are two fundamental conditions that directly influence the location of an intermediate school: First, there must be adequate school provision within ready reach of the 1A-6B pupils who would live in the immediate vicinity of the intermediate school, and, second, there must be a sufficient number of 7A-8B pupils within ready walking distance to justify the establishment of such a school.

A serious difficulty to be reckoned with in the establishment of intermediate schools is the attitude of the principals and of the teachers in the schools affected. The schedule of salaries is higher for 7A-8B than for 1A-6B teachers; also, in schools having from six to seventeen rooms in which there are grades above the 6B, the head teacher or assistant principal in charge is relieved from teaching a class. There is necessarily, however, no such exemption in schools having the same number of rooms but in which the highest grade is the 6B.¹ It is, therefore, only natural, when the 7A-8B grades are removed from given schools in order to organize an intermediate school, that the principals and the teachers of these schools feel that their professional standing is unfavorably affected. Unless some way is found to allay this feeling it will continue to make difficult the active extension of the intermediate school. In planning to increase the number of intermediate schools, there is also the question, which should be carefully considered, of the effect of removing from a school seventh and eighth-year pupils. The question to be considered is whether the removal of seventh and eighth-year pupils affects favorably or unfavorably the conduct, the ambition, and the work of younger children.

E—Recommendations

In view of the educational and economic efficiency of the intermediate schools now in existence, when judged on the basis of the data collected for the February-June term, 1911, and in view of the educational possibilities of such schools, we recommend:

¹ Schedule of Teachers' Salaries, 1912, pages 8 and 9.

1. That similar data be collected for a number of terms and should the foregoing findings be substantiated, we would further recommend:
2. That an immediate study be made by the Board of Education of all localities where conditions seem favorable to the establishment of intermediate schools.
3. That intermediate schools be established wherever conditions are favorable.
4. That, when established, intermediate schools should not only serve the purpose they now serve, but should be planned and carried on so as to aim at the fuller realization of the educational opportunities they may be made to afford, as outlined in this report.
5. That special care be taken to maintain sympathetic relations between the intermediate schools and the contributing schools on the one hand, and the closest articulation possible with high schools and vocational schools on the other; and that the peculiar opportunity to develop systematic vocational guidance be fully utilized.
6. That complete records of the work and cost of such schools be kept and that these records be used to improve intermediate schools and to judge of their efficiency.

TEACHERS IN ELEMENTARY SCHOOLS

REPORT ON
EDUCATIONAL ASPECTS OF THE
PUBLIC SCHOOL SYSTEM
OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY
OF THE BOARD OF ESTIMATE
AND APPORTIONMENT

PART II

Subdivision I

Elementary Schools

SECTION F.—PROBLEMS IN ELEMENTARY SCHOOL ORGANIZATION
AND ADMINISTRATION

Estimating for Budget Purposes the Number of Teachers
Needed in the Elementary Schools

BY

FRANK P. BACHMAN, PH.D.

Formerly Assistant Superintendent of Schools, Cleveland, Ohio

CITY OF NEW YORK
1911-1912

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ESTIMATING FOR BUDGET PURPOSES THE NUMBER OF
TEACHERS NEEDED IN THE ELEMENTARY SCHOOLS

The Report in Brief.

In the budget estimate of the Board of Education the largest single item is invariably the request for funds for teachers in the day elementary schools. The total budget estimate of the Board of Education for 1913 was \$38,316.650.58. Of this sum \$23,297,591.23, or 60 per cent. of the total, was for teachers in the day elementary schools. It is over the allowance of this enormous sum for the day elementary schools that the principal financial differences and misunderstandings between the Board of Estimate and Apportionment and the Board of Education arise. On the one hand, the Board of Education affirms that the entire amount requested is imperatively needed, and, on the other hand, the Board of Estimate and Apportionment affirms that the facts presented do not prove the need of the entire amount requested.

The margin in dispute is shown by the difference between the amount requested by the Board of Education and the amount allowed by the Board of Estimate and Apportionment.

Difference Between the Amount Requested and Amount Allowed for Teachers
in the Day Elementary Schools from 1909 to 1913.

Year	Amount Requested	Amount Allowed	Difference Between Amount Requested and the Amount Allowed
1909.....	\$17,925,453.98 ¹	\$17,287,563.11 ¹	\$637,890.87
1910.....	18,513,270.28 ¹	18,078,072.54	435,197.74
1911.....	19,112,709.72 ¹	18,615,594.12	497,115.60
1912.....	19,826,549.06	18,997,374.45	829,174.61
1913.....	23,297,591.23	22,535,612.64	761,978.59

¹ Includes substitutes and per diem teachers for all schools.

The day elementary school serves all the children of the city, and for probably nine out of every ten children it is the only school they ever attend. The day elementary school, the school of the people, should be liberally supported. Can such large sums as the foregoing be denied the Board of Education year after year without permanent injury to the elementary schools? Or are the estimates of the Board of Education inflated year after year and the allowances of the Board of Esti-

mate and Apportionment adequate for the proper support of the day elementary schools?

Whatever the answer to these questions, this much is clear: First, it is incumbent on the Board of Education so to present the facts to the Board of Estimate and Apportionment on the needs of the schools that if funds are allowed for a single teacher less than the number requested, just so much care and attention is denied a given group of children. Second, it is incumbent on the Board of Estimate and Apportionment, in view of other municipal activities and of the interests of the taxpayer, to refuse to vote public money on sentimental grounds; hence it is incumbent on the Board of Estimate and Apportionment to refuse to vote money for the day elementary schools until the Board of Education presents facts sufficient to demonstrate clearly what the needs of these schools are. Such facts have not been presented to the Board of Estimate and Apportionment in the past.

In preparing the budget estimate for 1911, the estimated register for which provisions were requested was based on an increase in register of December over the preceding May for 1902-1909, inclusive. When the needs of the school were thus estimated, requests were made to care for an increase in register for the Fall Term of 1910 of 28,000. The actual average annual increase in the register of December over December for the years 1902-1909, inclusive, was 21,707. It is, therefore, obvious that the estimated increase in register of 28,000 for which budget provisions were requested would have provided for at least 6,000 more pupils than there were reasons to expect there would be in the schools in December. It became clear at the hearings before the Budget Committee of the Board of Estimate and Apportionment in October, 1910, that this method of estimating the increase in register gave an inflated estimate of the needs of the day elementary schools, and as a result this method has not been used since.

In the preparation of the budget estimate for 1912 the individual school was made the unit in estimating the number of teachers for which provisions were requested. This method also gave an inflated estimate of the number of teachers needed, because:

1. The data on which the estimates of the principals were based were inadequate.
2. The estimated increase in register, when compared with the actual increases of previous years, was excessive.
3. The losses of pupils in advancing from grade to grade were underestimated, and
4. A study of the data on file at the Board of Education shows that the estimated register of December, 1912, of the individual schools when combined was at least 3,500 higher, and the estimated register of December, 1913, was at least 7,000 higher than the highest estimate that would probably have been made, had the foregoing data been taken into account.

The method of estimating the number of teachers needed in the day elementary schools was again changed in the preparation of the budget estimate for 1913. The district, of which there are forty-six in the system, was employed as the unit in making the estimate. This method is defective and should not again be used, because:

1. The size of class varies with the grade—from sixteen in ungraded classes to forty-four in the lower grades. A tabulation of the total register of a given month by districts for a series of past years supplies no basis of estimating the register of the different grades and kinds of special classes, and without the estimated register of each of the several grades, it is impossible to determine the number of classes needed.

2. The data presented supply no basis of determining whether or not the number of classes in a given grade and given school were too many or too few; hence supply no basis of determining the number of classes there should have been organized to care for a given register and that could have been accommodated in the given school.

3. Data presented for the month of December only, supply no basis of determining the needs of the schools for the other months of the year; hence of estimating the number of teachers needed month by month and of determining the length of time for which new teachers should be employed; and

4. It is impossible from the data presented to determine the correctness of the several estimated needs, and hence of the several budgetary requests based thereon.

So important is it, on the one hand, that the day elementary school be adequately supported and so necessary is it on the other hand that the interests of other municipal activities and of the taxpayers be conserved that both the Board of Estimate and Apportionment and the Board of Education are in accord that a plan of estimating the number of teachers needed in the day elementary school be developed and agreed on.

The principal points in the plan proposed in this report are as follows:

A. Register the Basis of Estimating the Needs of the Elementary Schools.

1. Average daily attendance should not be made the basis of estimating the needs of the day elementary school because
 - in bad weather,
 - on holy days, and
 - on days when there are civic celebrations, hundreds of thousands of children are temporarily out of school. Hence, to make average daily attendance the basis would be to underestimate the number of teachers needed.

2. The register at the end of the month, as now reported, should not be made the basis of estimating the needs of the day elementary schools, because there are now included in this register children who have not been in school an entire day during the given month, and also children who have not been in school an entire day during the given term. Hence, to make such a register the basis is to overestimate the needs of the schools.

3. The register to be used as the basis of estimating the needs of the day elementary schools should exclude all transfers to other rooms or buildings and should include only pupils who have been in school at least one entire day during the given month.

B. The Entire System the Unit in Estimating the Register.

1. The individual school should not be made the basis of estimating the register for which budget provisions are requested, because:

(a) In the case of the majority of the elementary schools it is impossible to estimate with exactness from two to eighteen months in advance:

- (1) The total register of the individual school.
- (2) The distribution of this estimated total register among the several grades.
- (3) In what grades there will be such increases or decreases as to make necessary an increase or a decrease in the number of classes. Hence, it is impossible to forecast with exactness the needs of the individual school.

(b) It is not necessary for budget purposes to know in advance the needs, hence the number of teachers that will be required in a particular school.

2. The entire system should be made the unit in estimating the total register for which provisions are requested, because:

(a) Only those factors affecting the increases in the register of the entire system have to be taken into account in estimating the total register for the system as a whole, whereas in attempting to estimate the register of a particular school or a particular district those factors affecting the increase in the register of the individual school or district have to be considered also. Hence, it is a simpler task to estimate the register of the entire system than the register of an individual school.

(b) The register of the entire system as a whole can be estimated with greater relative exactness than the register of an individual school or district.

(c) The only register needed for budget purposes is the total estimated register of the system as a whole; it is therefore needless to

make 500 or even 46 separate and less exact estimates, each to be checked and verified.

C. The Basis of Estimating the Total Register is the Average Increase for a Series of Years in Register of the Entire System.

1. The total register of the system as a whole changes from year to year and from month to month, and the increases year over year and from month to month differ materially.

2. To estimate in July, 1912, the register, for example, of December, 1913, it is necessary to estimate what the increase in the register of December, 1913, over December, 1912, will be, and add this estimated increase to the register of December, 1912; the sum will be the estimated register of December, 1913.

3. In a series of annual increases of December over December for a number of years, for example, of December, 1903 over 1902, 1904 over 1903, etc., the nearest constant is the arithmetic average of the different annual increases. The very safest estimate, therefore, of the increase in register of December over December is the arithmetic average of the annual increases of December over December for a considerable number of years.

4. In making a given estimate, whether it is preferable to use as the basis of the estimate the average annual increase for five years, or four years, or three years, or two years, or the increase for one year, can only be determined in view of conditions at the time the given estimate is made.

5. Estimated registers based on the actual average annual increase for a series of years ranging from one to five are exact on the average within less than three-quarters of one per cent.

6. Since the total register of the elementary schools changes from month to month, it is necessary in order to determine their needs to estimate the total register of the system as a whole for each month of the school year.

D. The Basis of Distributing the Total Estimated Register Among the Different Grades Is the Average Annual Increase or Decrease for a Series of Years in the Register of Each Grade.

1. The total register of the system as a whole for a given month of a particular year is the sum total of the registers in all elementary schools of the different grades. The increase year over year in the total register is, therefore, the net sum of the increases or decreases in the register of the different grades.

2. The basis of estimating the distribution of a given total estimated register, that is, of estimating the register of each of the grades, is consequently the average annual increase or decrease in the register

of the respective grades for the same series of years as was used in estimating the total register in question. If, for example, the average increase in the register of the entire system for three years was employed as the basis of estimating the total register, then the average annual increase or decrease for three years in the register of a particular grade is to be used as the basis of estimating the register of the given grade or kind of special class.

3. The register of each grade and kind of special class for each month of the school year must be estimated or the estimated total register of the entire system for each month of the school year must be distributed among the several grades, because:

- (a) The register of the several grades changes from month to month.
- (b) The number of teachers needed in a given grade to instruct a given number of pupils changes from month to month.
- (c) The salaries of teachers differ with the grade in which they teach. Hence, it is necessary to know the number of teachers needed in each grade and kind of special class in each month of the school year.

E. The Individual School is the Unit in Determining the Number of Pupils for Whom One Teacher Should Be Provided.

1. The size of class, hence the number of pupils instructed per teacher, is affected by:

- (a) The number of pupils that happens to be in the grade.
- (b) The differences in the size of classrooms.
- (c) The differences in the size of elementary schools.
- (d) The presence of part-time classes.
- (e) Opinions of principals on the proper size of classes, and
- (f) The budget allowance.

Therefore, in making a budgetary estimate for the elementary schools, neither the total estimated register for the system as a whole, nor the estimated register of a given grade can be divided by a theoretical size of class to find the number of teachers needed.

2. To determine the number of pupils one teacher can instruct, it is necessary to study by months and by grades the number and the size of the classes in each elementary school, to the end that the number of teachers actually needed and that could be accommodated under the given conditions may be known.

3. By combining by months the register of each grade and the number of teachers in service and that should have been in service, it is possible by division to determine by months and for each grade the number of pupils for whom one teacher should be provided.

- F.** With the estimated register by months and by grades, and with definite knowledge by months and by grades of the number of pupils one teacher can instruct in hand, it is possible by division to determine the total number of teachers of each kind needed.

There is no practical reason why the proposed plan should not be used in preparing the budget estimate of 1914. To collect by months and grades the data of past years on register and number of classes involved in carrying the proposed plan into effect would probably require the time of three competent clerks for a period of five months. To collect hereafter currently the data called for on register, number and size of classes, and on the number of classes actually needed,—data equally essential to the efficient administration and organization of the schools, would probably require the continuous employment of two competent clerks.

Should the foregoing plan be adopted and used in the preparation of the budget of 1914, it will be possible to *verify* and *check* the following facts, which will be at hand by grades, for each month of the budget year:

- (1) Estimated total register.
- (2) Number of pupils on the average one teacher can economically and efficiently instruct.
- (3) Estimated number of teachers needed.
- (4) Estimated period for which teachers should be employed.

The Report in Detail.

I. The Two-Fold Character of the Budget Request for Teachers in the Day Elementary Schools.

In considering the budget requests of the Board of Education for the day elementary schools, it should be kept in mind that the requests for a given budget year, for example, 1913, are formulated not later than the preceding July. In consequence, these budget requests are subdivided into:

- (a) Requests for salaries (for 1913 only) of persons in service as of a given date, for example, May 31, 1912, and for the salaries (for 1913 only) of persons to be appointed to fill vacancies existing as of May 31, 1912. The salaries of such persons for the remainder of 1912 have been provided in the budget of 1912, but these persons must be taken into account in considering the estimate of 1913, and salaries must be provided for such persons in the budget for 1913. These are the teachers who are engaged in instructing the pupils in school up to

the end of June and prior to the opening of the schools in September preceding the budget year in question.

(b) Requests for salaries (for 1913 only) of teachers to be appointed (1) between September 1st and December 31st, prior to the given budget year and (2) during the budget year.

(1) With the opening of the schools in September, there is an influx of new pupils (see Table IX, p. 540), and in consequence teachers in addition to those in service in the preceding May, and to those to be appointed to fill vacancies existing at that time must be appointed to care for this increase in register. The salaries of such teachers have been provided in the budget of the preceding year; hence salaries for such persons are requested for 1913 only. Nevertheless, such persons must be taken into account in considering the budget estimate for 1913, for these persons, together with those in service May 31 and to be appointed to fill vacancies existing at that date, constitute the payroll as of December 31, 1912; hence, if they are to be continued in service, salary provision must be made for them in the budget of 1913.

In most other departments of the city, the payroll as of December 31st is a fixed and known quantity; consequently, it is only necessary to consider the needs and probable changes in the payroll of the given department for the budget year in question. The payroll of the day elementary schools as of December 31st is not fixed; it is conditioned to a considerable extent by the number of pupils entering school between September and December. It would, of course, be possible for the Board of Education, in view of the allowances in the preceding budget, to fix the number of persons there will be on the payroll of the day elementary schools as of December 31st. In that case all consideration by the Board of Estimate and Apportionment of the increase in the register between September and December prior to the budget year in question and of the number of teachers needed might be eliminated, for it would only be necessary to provide salaries in the budget under consideration for those persons on the payroll as of December 31st and to fix on the number of persons to be appointed during the budget year. There are, however, advantages, as will be pointed out later, in taking into account the probable register of the schools in the Fall Term prior to the given budget year. To be sure, such a procedure seems to take the increase in register between September and December into account twice. For example, in the budget of 1912 provisions were made to care for the increase in register between September and December, 1912, and again in making up the budget for 1913 this increase was considered. It should, however, be noticed that the increase in register between September and December, 1912, is only taken into consideration in connection with the budget of 1913 in order to gain a more exact idea of the number of teachers needed to be appointed during this period, hence to acquire a more exact idea of the number of teachers for whom salaries should be provided

in the budget of 1913. The salaries for 1912 for all teachers appointed between September and December, 1912, were, of course, provided in the budget of 1912.

(2) There is no increase in the register of the day elementary schools between January and June. There is, however, a re-distribution of the register in February, owing to promotions at the end of January, and, while there is no increase in the total register between January and June, there are reasons to believe that there is considerable change in the register of particular grades. At all events, experience has shown that it is necessary to appoint additional teachers between January and June.¹ It is also necessary to appoint teachers between September and December to care for the increase in register of the Fall Term over the preceding Spring Term. In consequence, there must be included in the estimate, for example, for 1913, salaries for those teachers who are to be appointed during 1913 to care for the re-distribution and the increase in register.

The budget estimate of the Board of Education for the day elementary schools, in so far as it includes requests for the salaries of persons in service May 31st and for persons to be appointed to fill vacancies existing at that date, rests, in a sense, on facts. For the number of persons in service and their respective salaries, also the number of existing vacancies and the respective salaries attached thereto, are a matter of record. Reference to the records shows that the number of classes is invariably larger in January than in the preceding May; hence the number of teachers needed is larger. Conditions, however, might arise,—a decided decrease in the register, which would make unnecessary the employment in January of all the teachers in service in May, including those to be appointed to fill vacancies. Should such a condition arise, that part of the budget estimate including salaries for teachers in service in May and for those to be appointed to fill existing vacancies would, like other parts of the estimate, come to rest more directly on a forecast of the needs of the schools.

The number of persons to be appointed between September and December prior to the given budget year depends on the estimated increase in register between these months. The number of persons to be appointed during the given budget year depends on the estimated increase in register during the given year. This portion of the budget estimate of the Board of Education for the day elementary schools, resting as it does on forecasts made from two to eighteen months in advance of the register for which instruction should be provided, necessarily contains an element of uncertainty. The primary problem in making the estimate for the day elementary school is, therefore, one of reducing this element of uncertainty to a minimum.

¹ See Table IX, p. 546.

II. Present Methods and Primary Defects in Present Method of Estimating Need of Teachers.

1. *Chief Points of Present Method.*—The chief points in the method employed by the Board of Education in estimating the need of teachers for the day elementary schools for 1913 may be summarized as follows:

(a) The total register as of December 31st for the years 1908-1911, inclusive, was tabulated by districts and summarized for the city as a whole.

(b) The total register as of December 31, 1912, and as of December 31, 1913, was estimated by districts and summarized for the city as a whole.

(c) The total number of classes of December 31st for the years 1908-1911, inclusive, was tabulated by districts and summarized for the city as a whole; also the number of classes as of May 31, 1908-1912, inclusive.

(d) The total number of classes as of December 31, 1912, and as of December 31, 1913, was estimated by districts and summarized for the city as a whole.

(e) The register and number of classes in the several grades and kinds of special classes as of May 31, 1912, were tabulated by districts and summarized for the city as a whole.

(f) The total estimated number of classes as of December 31, 1912, and as of December 31, 1913, was distributed for the city as a whole by grades and kinds of special classes.

(g) The increase in the estimated number of classes, hence in the estimated number of teachers to be appointed, as of December 31, 1912, over May 31, 1912, was determined for the city as a whole by grades and kinds of special classes; also the increase in the estimated number of classes, hence in the estimated number of teachers to be appointed as of December 31, 1913, over December 31, 1912.

(h) The number of classes as of May 31, 1912, having a register of fifty and of fifty-one or over was tabulated by districts and summarized for the city as a whole.

(i) Requests were made for salaries for a given number of principals, teachers, etc., for one year, for a given number for six months, and for a given number for five months.¹

2. *Primary Defects of Present Method.*—The primary defects in the method employed by the Board of Education in estimating the need of teachers in the day elementary schools for 1913 are:

(a) An examination of the estimates for each of the several districts reveals no uniformity in the method employed in making the

¹ See Estimate for 1913 of the Board of Education, also blank: "Estimate of New Teachers Needed in Elementary Schools for Year 1913."

several estimates; no statement of the formulæ employed or of the specific information, if any used, accompanies the particular estimates; it is, in consequence, impossible to verify or check the several estimates.

(b) The elementary school is organized by grades and kinds of special classes, and the number of classes needed, hence the number of teachers required depends, not only on the total register, but also on the distribution of this register among the several grades and kinds of special classes (see Table XIV, p. 561, and Table XVI, p. 564). A tabulation, therefore, of the total register for a series of past years by districts for the elementary schools as a whole supplies no basis of estimating the distribution of the register for which budget provision should be made.

(c) From the data presented it is impossible to determine whether or not the number of classes reported was too many or too few and, if too few, how many too few, that is, it is impossible to determine in what schools it was impossible to consolidate two classes into one or in what schools it would have been practicable to have divided large classes, and it is also impossible to determine whether or not the additional classes could have been accommodated, even were teachers provided to divide large classes. In a word, the data supplied afford no adequate basis of control, that is, of determining the actual number of classes which should have been organized to care economically and efficiently for the given register, and which could have been accommodated under actual working conditions.

(d) The register and the number of classes in the several grades change from month to month, and there is a corresponding change in the number of teachers needed.¹ The data supplied afford no adequate basis of estimating, by months and by grades and kinds of special classes, the number of teachers required; therefore, supply no basis of judging of the correctness of the estimated number of teachers needed or of the correctness of the length of time for which the new teachers to be appointed during the budget year should be employed, and hence of the length of time for which salaries should be provided.

In order to make the constructive suggestions involved in correcting the foregoing defects, it is necessary to consider: the basis of estimating the need of teachers in the elementary schools; how to determine the number of pupils one teacher can instruct; and how to estimate the total register and to estimate its distribution among the several grades and kinds of special classes.

III. Attendance Versus Register as the Basis of Estimating Need of Teachers In Elementary Schools

The estimated need of teachers in the day elementary schools for 1913, and the same is true for a number of past years, was based on an

¹ See Report on Teachers in Service by Months, on file at the office of the City Superintendent of Schools.

estimated register.¹ There are persons, however, high in financial and educational authority who believe that average daily attendance should be made the basis of determining budgetary requests.

1. **AVERAGE DAILY ATTENDANCE AS THE BASIS.**—(a) Average daily attendance represents, it is held, "solid service," actual service rendered, hence should be made the basis of estimating the needs of the elementary school. Average daily attendance does represent "solid service," but it represents the minimum amount of "solid service." To illustrate, the net enrollment² of all day elementary schools was, for the school years 1910-1911, 770,243, the average monthly register was 677,962, and the average daily attendance was 603,455.³

The difference between the net enrollment and the average daily attendance for the school years 1910-1911 was 166,788; the difference between the average monthly register and the average daily attendance was 74,507. Did the school render no service whatever to these 166,788 pupils or to these 74,507? The answer to this question is found in the actual work of principals and teachers. The principals of the city can demonstrate that a considerable part of their time is devoted to looking up and to devising means of getting back into school and of holding in school the 166,788 pupils who represent the difference between the net enrollment and the average daily attendance. Teachers are also in position to show that a considerable part of their energies are devoted to keeping children in school and to giving special aid to those irregular in attendance. These important services of principals and teachers are not directly reflected in average daily attendance in the so-called "solid service," but are not these among the most valuable services rendered?

(b) *Variations in Attendance.*—In considering average daily attendance as the proper basis of determining budgetary requests, it must be kept in mind that average daily attendance is very variable, being subject to a number of conditions, such as the weather, personal illness, epidemics, holidays, holy days, civic celebrations, etc. To illustrate: The register, number attending, and the per cent. of attendance on register in the 1A grade, P. S. No. 1, Manhattan, March 14, 15, and 18, 1912, were as follows:

Date	Register	Number Attending	Per Cent. of Attendance
March 14, Thursday.....	186	165	88.71
March 15, Friday.....	186	138	74.19
March 18, Monday.....	185	164	88.65

¹ See Estimates of the Board of Education for 1913, 1912, and 1911.

² The total number of different pupils on the register during the year.

³ Annual Report of the City Superintendent of Schools for 1910-1911, p. 22.

The number of pupils absent on March 14th was twenty-one, March 15th forty-eight, and on March 18th twenty-one; similarly the per cent. of attendance was lower on March 15th than on March 14th by 14.52 per cent. and lower than on March 18th by 14.46 per cent. Why this difference in the number of pupils absent and per cent. of attendance? The explanation is found in the fact that on March 15, 1912, there occurred a severe rain storm.

The effect of the weather on attendance is, to be sure, greater in the lower grades than in the higher grades, but the effect is marked even when all grades are combined. The register in all grades, the number attending, and the per cent. of attendance on register in P. S. No. 1, Manhattan, March 14 and 15, 1912, were as follows:

Date	Register	Number Attending	Per Cent. of Attendance
March 14, Thursday.....	2,265	2,105	92.94
March 15, Friday.....	2,265	1,963	86.67

The number of pupils absent March 14th was 160 and on March 15th 302, a difference of 142; the per cent. of attendance March 14th was 92.94 per cent. and on March 15th 86.67 per cent., a difference of 6.27 per cent.

The effect on attendance of holy days is even greater than the effect of unfavorable weather. The register, the number attending, and the per cent. of attendance on register in P. S. No. 1, Manhattan, September 26, 27, and 30, 1911, were as follows:

Date	Register	Number Attending	Per Cent. of Attendance
September 26th, Thursday.....	2,342	1,335	57.00
September 27th, Friday.....	2,326	1,310	56.32
September 30th, Monday.....	2,322	2,121	91.34

There were absent from P. S. No. 1, Manhattan, on September 26th 1,007 pupils, on September 27th 1,016, and on September 30th 201 pupils; the per cent. of attendance was lower on September 26th than on September 30th by 34.34 per cent. and lower on September 27th than on September 30th by 35.02 per cent. All of which was due to the fact that September 26 and 27, 1912, were holy days.

The effects of the weather and of holy days on the attendance in P. S. No. 1, Manhattan, are illustrative of the effects of these two factors on the attendance in all the elementary schools of the city. In a word, thousands on thousands of children remain at home on stormy

days and tens on tens of thousands of children are out of school on holy days, to lessen materially the number of pupils in average daily attendance. The temporary absence of these children reduces the number of pupils in average daily attendance, but this temporary absence in no wise lessens the actual need of the schools. The actual need of the school is determined by the register, the number of pupils for whom the school is responsible, and not by the number of pupils that *may* happen to be present on this or that day.

Further, the average monthly register and the average daily attendance in all the day elementary schools of the city were for September, October, and November, 1910,¹ as follows:

Date	Average Monthly Register	Average Daily Attendance
September.....	625,252	592,152
October.....	648,117	521,739
November.....	647,526	590,220

It will be observed that the average monthly register for October is higher than the average monthly register for either September or for November. The average monthly register being higher, it would be natural to expect that the average daily attendance in October would be higher than in September or in November. There were, however, 70,413 fewer pupils on the average in daily attendance in October than in September, and 68,481 fewer pupils than in November. With a higher register in October than in either September or October, the question arises, Why was the average daily attendance lower? There may have been other contributing causes, but the primary cause was the Hudson-Fulton Celebration.

It is known that thousands on thousands of children were kept from school in order that they might enjoy these festivities. But can it be held merely because the average daily attendance was less in October than in September or November that the need of teachers was less? Obviously, the fact that children in great numbers were absent from school a given number of days in no wise affected the number of teachers needed to care for the pupils in school the remaining days of October. It should also be equally obvious that the average daily attendance in October supplies no basis whatever of determining what the needs of the schools were. Had the Hudson-Fulton Celebration been longer or shorter, had the celebration occurred on different days, had the weather been different, the effect on the average daily attendance might have been materially different; whereas the register for October, the number

¹ The data given in this report in all cases where the specific source is not given are taken from the official records of the Board of Education.

of pupils for whom the school was responsible, and hence the actual need of teachers in the schools, were probably affected very little, if at all, by these festivities.

The increase in the average daily attendance year over year (calendar year) and the increase of the register at the end of one year (calendar year) over another were for the years 1906-1911 as follows:

Year	Increase in Average Daily Attendance	Increase in Register	Per Cent. of Increase in Average Daily Attendance	Per Cent. of Increase in Register
1907 over 1906.....	20,763	21,836	4.21	3.82
1908 over 1907.....	26,719	14,810	5.20	2.49
1909 over 1908.....	10,382	19,130	1.92	3.14
1910 over 1909.....	8,285	16,734	1.50	2.66
1911 over 1910.....	24,621	11,913	4.40	1.85

It will be noticed from the foregoing figures that in but one of the five years in question, 1907 over 1906, does there appear to be any direct relation between the increase in average daily attendance and the increase in register. In the other four years of the five in question it would seem that attendance and register work by opposites. In 1909, for example, an increase in register of 19,130 resulted in an increase in average daily attendance of but 10,382, whereas in 1911 an increase in register of 11,913 was accompanied by an increase of 24,621 in average daily attendance. All of which tends to prove, as stated above, that average daily attendance is conditioned to a considerable extent by factors other than register and that average daily attendance is no index to the actual need of the school. The need for teachers in 1909 to care for an increase in register of 19,130 was not affected by the fact that the increase in average daily attendance was only 10,382; similarly, the need of teachers in 1911 to care for an increase in register of 11,913 was not affected by an increase of 24,621 in average daily attendance. The fact that in 1909 conditions were presumably unfavorable to regular attendance, and in 1911 presumably favorable, neither increased nor decreased in 1909 or in 1911 the number of pupils one teacher could instruct or the total number of teachers needed.

(c) *Attendance and Cost of Instruction.*—In addition to claiming that average daily attendance represents "solid service," hence should be made the basis of budgetary estimates, it is held that there is a direct relation in the day elementary schools between the average annual increase for a series of years in average daily attendance and the average annual increase for the same series of years in the cost of instruction. This being true, the preparation of budgetary estimates (General Fund) for the day elementary school is a simple matter, viz., estimate, for example, on the basis of the average annual increase for a series of

years, the per cent. of increase in average daily attendance for the budget year 1913 over 1912 and increase by this per cent. the amount spent on instruction during 1912. In short, all that is needed to prepare budgetary estimates (General Fund) for the day elementary schools is the record of average daily attendance and reports of expenditures, an account book.

The per cent. of increase in average daily attendance and the per cent. of increase in the cost of instruction in the day elementary schools were for the years 1906-1911 as follows:

Year	Per Cent. of Increase in Average Daily Attendance	Per Cent. of Increase in Cost of Instruction
1907 over 1906.....	4.21	5.45
1908 over 1907.....	5.20	5.36
1909 over 1908.....	1.92	4.44
1910 over 1909.....	1.50	3.52
1911 over 1910.....	4.40	2.87

It is clear from the foregoing that there is no exact relation year for year between the per cent. of increase in average daily attendance and the per cent. of increase in the cost of instruction. Nor is there any such relation for a series of years. The average annual per cent. of increase in average daily attendance and the average annual per cent. of increase in the cost of instruction were for the:

Period of Years	Per Cent. of Average Annual Increase in Average Daily Attendance	Per Cent. of Average Annual Increase in Cost of Instruction
Five-year period, 1907-1911.....	3.45	4.33
Four-year period, 1908-1911.....	3.26	4.05
Three-year period, 1909-1911.....	2.61	3.61
Two-year period, 1910-1911.....	2.95	3.20

Since there is no exact relation between the per cent. of increase in average daily attendance and the per cent. of increase in the cost of instruction, it follows that the per cent. of average annual increase in average daily attendance for a series of past years supplies no reliable basis, as claimed, for making budgetary requests in the general fund for the day elementary school.

(d) *Variability of Attendance Versus Variability of Register.*—Whether average daily attendance or register is made the basis of budgetary requests, it should be kept in mind that these requests must of necessity rest on an estimate. If the average daily attendance or the

register remained constant, that is, the same from year to year, or did each increase at the same rate year over year, it would be a simple matter to forecast the attendance or the register for which budget provisions should be made. Neither attendance nor register are constant: both vary from year to year. The greater the variability, the greater the difficulty of forecasting with exactness.

Table I gives for a series of years and for each month of the school year, with the exception of January and June,¹ the standard deviation,² also the average deviation² of the increases in the register at the end of the month; it gives also the same facts for the average daily attendance for the month.

Table I—Deviation of Increase in Register Versus Attendance

Month	Years Included in Series	Elementary School Including Kindergarten			
		Standard Deviation of Increases in		Average Deviation of Increases in	
		Register	Average Daily Attendance	Register	Average Daily Attendance
September.....	1902-12	7,075	39,338	5,734	31,654
October.....	1902-12	6,714	26,893	5,111	20,116
November.....	1902-11	6,684	5,155	4,841	4,256
December.....	1903-11	3,474	7,910	3,001	6,960
February.....	1902-12	7,258	8,189	5,947	6,644
March.....	1902-12	6,778	6,125	5,710	5,248
April.....	1902-12	6,805	7,885	5,515	6,875
May.....	1902-12	6,787	9,849	5,490	7,732

It will be observed that with the exception of November and March the standard deviation of the increases in the register is less than the standard deviation in average daily attendance; it will also be noted that the standard deviation of the increases in the register varies from 3,474 to 7,258, a range of 3,784, whereas in average daily attendance the variation is from 5,155 to 39,338, a range of 34,183. Similarly, with the exception of November and March, the average deviation of the increases in the register is less than the average deviation in attendance. The average deviation of the increases in the register varies from 3,001 to 5,947, a range of 2,946, whereas the average deviation in attendance is from 4,256 to 31,654, a range of 27,398.

¹ Data for January and June are omitted from the table, as they will be from all the subsequent tables of this report, because the official data for these months are not uniform in character.

² Average deviation is the average of the deviations from the arithmetic average. The standard deviation differs from the average deviation in that each of the deviations from the arithmetic average is given weight according to its size, thus placing greater emphasis on extreme deviation. See King, *Elements of Statistical Method*, pp. 121-158.

Being the greater variable, it is, therefore, more difficult to estimate with exactness average daily attendance than register. Hence, budgetary estimates based on a forecast of average daily attendance would be less reliable than estimates based on a forecast of the register.

(c) *Summary.*—Average daily attendance should not be made the basis of budgetary estimates for the day elementary school, because average daily attendance represents the minimum, and not the total, service of the school; because average daily attendance varies directly with the weather, amount of personal illness, festivities, etc.; hence is no reliable index of the number of teachers needed to care for a given register and, therefore, no reliable index of the actual needs of the schools; because there is no exact relation, as held, between average daily attendance and expenditures for instruction, hence budget making cannot be reduced to a mere matter of accounting; and because average daily attendance is more variable than register and in consequence budget estimates based on a forecast of attendance would be less reliable than budget estimates based on a forecast of the register.

2. REGISTER AS THE BASIS.—The budget estimate for the day elementary school for 1913 was based, as stated above, on an estimated register.

(a) *Pupils Included in Present Register.*—The actual register on which this estimated register was based included all pupils who had been members of the school and who had not been officially discharged.¹ Consequently, the register of a given school, for example, as of December 31st, may include children who have not been in attendance a single day between the opening of school in September and December 31st, or it may include children who have not been in school a single day in December, or who have been absent continuously ten or more days prior to the date of making the report.

The reported register as of December 31, 1911, of certain classes of eight schools of Manhattan and Brooklyn² was 13,297. There were included among these 13,297 pupils 214, or 1.61 per cent., who had been continuously absent from school ten days or more prior to the making of the report. If the amount of absence in all elementary schools was the same as in the foregoing eight schools, there were included in the reported register as of December 31, 1911 (656,598), 10,571 children who had been absent ten consecutive days prior to the making of the report.

Of the 13,297 pupils reported on the register of the foregoing schools as of December 31, 1911, 173, or 1.30 per cent., had not been in school a single day during the month of December. At the same rate,

¹ See By-Laws of the Board of Education, Sect. 45, 2A, p. 57.

² The eight schools in question are Numbers 23, 1, 83, 114, and 166, Manhattan, and 36, 73, and 85, Brooklyn. The register as herein reported for these schools is not in all cases the total register as of December 31, 1911. In some schools it was impossible to obtain without inconvenience the "Teacher's Class Records" for all classes.

there were included in the reported register as of December 31, 1911, for all elementary schools 8,536 pupils who in the month of December had not been in school an entire day.

Of the 13,297 pupils reported on the register of the foregoing eight schools as of December 31, 1911, 34, or .26 of 1 per cent., had not been in school between the opening of school in September and December 31st. At the same rate for the city as a whole, there were included in the reported register as of December 31, 1911, for all elementary schools 1,707 pupils who between September and December 31st had not been in school at all.¹

What is true of the reported register of December is doubtless, within limits, true of the reported register of each of the other months of the school year.

The present policy of keeping a record of each child until the child is officially discharged on the order of the principal is, in our opinion, right. In a city as large as the City of New York, and in a city where there are such constant and radical shifts of population, there is need of utilizing every means of keeping track of children, to the end that each child of compulsory school age may be held in school. To accomplish this end, it is, however, not necessary to keep the names of children on the class roll or on the register of the school who have been absent for an entire month or who have not been in school at all during the given term. It is possible, in our opinion, to preserve the present policy of keeping track of all children and at the same time to purge the register of the names of all pupils who should not, as we believe, be included in a register which is to be used for administrative and budgetary purposes.

Pupils absent from school consecutively for a month, or who have not been in school at all during a given term, fall into one of three classes: (1) pupils absent for good and known reasons, *i. e.*, illness, quarantine, etc.; (2) pupils who have been transferred to other schools and who have failed to report to the school to which they were transferred; and (3) pupils who are out of school for unknown reasons. It is not necessary when a pupil is absent for good and known reasons that such a pupil be carried month after month on the working register of the school. After due routine, which could be easily prescribed, such a pupil might be taken from the class roll of the teacher and entered for purposes of record on a special list in the office of the principal. Similarly, when a child is transferred to another school, such a pupil might be dropped at once from the class roll of the given room and for purposes of record and control be entered on a special list in the office of the principal, instead of as under present practice kept on the class

¹We do not affirm that the conditions in all other elementary schools are the same as in the eight schools studied. The results of our study of the "Teacher's Class Records" in the eight schools in question are suggestive of what is probably true of the reported register as of December 31st of all elementary schools.

roll until official report is received that the child has entered the school to which the transfer was given, or until a final report on the particular child is received from the attendance officer. Furthermore, instead of pupils who have not been in school at all during the given term being carried on the roll of a class month after month, to be marked absent day after day, thus lowering the per cent. of attendance in the given room, and being a continuous point of irritation to the teacher, all such pupils (after due routine on the part of the teacher) could be dropped from the roll of the given class and entered on a special list in the office of the principal. In a word, with respect to all cases of continuous absence, the duties of the teacher could be prescribed. These duties having been performed and proper record made thereof, the teacher would automatically take the names of the respective pupils from her class roll. These names would be placed on a special list in the principal's office and the principal charged with the responsibility for this list.

Register as employed in the elementary schools of the City of New York and as reported to the office of the City Superintendent of Schools at the end of each month of the school year includes, in view of the foregoing, the following groups of children:

- (1) Pupils regular in attendance.
- (2) Pupils irregular in attendance, but who have been in school at least one entire day during the given month.
- (3) Pupils absent for good and known reasons, but who have not been in school one entire day during the given month.
- (4) Pupils who have been transferred, but who have not as yet been officially reported as entering the school to which they were transferred, or on whom the attendance officers have not as yet made final report. Such pupils may or they may not have been in school one entire day during the given month.
- (5) Pupils who are absent for unknown reasons and who have not been in school one entire day during the given month.
- (6) Pupils who are absent for unknown reasons and who have not been in school an entire day during the given term.

(b) *Register Proposed for Budgetary Purposes.*—A register which is to be made the basis of budgetary requests should be a record of the actual direct demands made on the time and energies of the teacher. Such a register for a given class and for a given month should be the record of the actual number of different pupils, exclusive of all transfers to other rooms of the same building or to other schools, who have been in the given class at least one entire day during the month, or it should be what is termed a total register for the month. Such a register represents within narrow limits the direct responsibility of the teacher for the given month, but does not, to be sure, represent the entire responsibility of the teacher; he or she has what may be called, for the

want of a better term, indirect responsibilities, viz., the necessity of looking after pupils who are continuously absent and who may not have been in attendance during the given month. Such a register, however, including, as it does, all pupils, exclusive of transfers, who have been in the class one entire day during the given month and excluding all pupils who have not been in school one entire day during the month, represents very closely actual demands and actual responsibilities; hence, it is our opinion that such a register would serve as a reasonable and just basis of estimating the register for which budget provisions are requested.

The difference between the register at the end of the month as now reported and the register we would propose to be used as the basis of budget estimates may be summarized as follows:

Register as Now Reported	Proposed Register
1. Includes pupils who have not been in school one entire day during the given month.	1. Includes only pupils who have been in school one entire day during the month.
2. May include pupils transferred to other schools.	2. Does not include pupils who have been transferred to other schools.
3. Excludes discharges (pupils officially dropped from school) who have been in school one entire day during the month.	3. Includes discharges (pupils officially dropped from school) who have been in school one entire day during the month.

Two objections may be raised to the proposed register. First, by excluding transfers, it may be held that there would be a number of pupils at the end of each month who had been transferred, but who had either not had time or who had delayed in entering the school to which they had been sent; in consequence such pupils would not be reported as of the register of any school. We do not feel that this is a real objection, but should this prove a real difficulty some simple way, we believe, could be found of removing it.

It may also be held that, since transferred pupils are excluded from the register, a given teacher may have instructed during the course of the month more pupils than such a register would show. This is true for any one teacher, but it is not true when a number of teachers are considered in relation to each other. A transferred pupil may have been under a teacher a part of a month and may not be reported as having been under the given teacher, but such a pupil would be reported by the teacher having the pupil at the end of the month; hence, the pupil is counted, but counted only once.

Second, since the proposed register includes pupils who have been in school during the month in question, but who have been officially discharged, pupils would be included in the register who, it is known, have

been discharged, and hence are no longer in school. This is true, but it should be remembered that the proposed register is not the register at the end of the month as now reported, but a total register for the month. Since these discharged pupils have been in school during the month in question, have occupied seats and have been under instruction, it is proper, we believe, to include them in a register which has as its object to represent the needs of the school, not at the end of the month, but for the month as a whole.

The present register is used both for administrative and budgetary purposes. The register we are suggesting to be used for budgetary purposes differs, as we have seen, from this register. The practical question is, Shall two different registers be reported, or would the register we are suggesting for budgetary purposes serve quite as well as the present register for administrative purposes, hence can it be substituted for the present register? The primary administrative use made of the present register is to determine the working conditions within the school, such as organization, distribution, and size of classes. The most important administrative action based on this register is to recommend the combination of small classes and the division of large classes. Before such recommendations are made, or at least before they are carried into execution, data supplementary to the reported register are, as a rule, obtained on the particular classes in question.¹ Neither the register as now reported nor the register we are suggesting for budget purposes gives, in our opinion, a reliable representation of the actual working conditions in the school at the end of the month. However that may be, the register we are suggesting for budget purposes gives, as we have seen (see pp. 528-9), a more reliable representation of the actual working conditions in the school at the end of the month than the register as now reported. Hence, there is no reason why the register suggested for budgetary purposes could not be substituted for the present register, provided the foregoing suggested administrative changes in keeping the register were made (see pp. 527-8).

While the register we are suggesting for budgetary purposes will serve reasonably well for administrative purposes, were the data needed for informational, administrative and budgetary purposes considered, it would be found necessary, we believe, to have the following monthly reports on register: (1) register to date; (2) register for the month; (3) average daily register for the month; and (4) register at the end of the month. Register to date shows for each class the total register or membership, exclusive of transfers, up to and including the date of the given monthly report. Register for the month shows for each class the total number of pupils, exclusive of transfers, in the given class at least one entire day during the given month. Average daily register for the month shows for each class the average daily membership, ex-

¹ See Blank: Application for Permission to Form or Divide Classes, on file at the office of the City Superintendent of Schools.

clusive of transfers, for the given month. Register at the end of the month shows for each class the actual membership of the class at the end of the month.¹

Should those in educational authority deem it inadvisable, in view of other pressing demands, to collect monthly such detailed data on register as the foregoing, and to make the administrative changes involved in substituting the register we are proposing to be used for budgetary purposes for the present register at the end of the month, they should not be allowed to do less than to provide a separate column in the monthly report now made by each principal to show monthly for each class the total register for the month as defined above. In this way the data (register for the month), which should be made the basis of estimating the register for which budgetary provisions are requested, could be acquired without materially increasing the work of teachers and principals.

IV. The Individual School Versus the Entire System as the Unit in Estimating the Register.

A budget estimate has to do, not with the present, but with the future; hence, the need for which budget provision is to be made must be estimated. In the case of the school, the need for which budget provision is to be made can be expressed best, as we have seen, in terms of register. By reason of the time at which it is necessary to prepare the budget estimate for the elementary schools,² it becomes necessary to forecast from two to eighteen months in advance the register for which budgetary provisions are requested.

I. THE INDIVIDUAL SCHOOL AS THE UNIT.—Since the pupils for whom budget provisions are to be made will be in and will be cared for by a particular school, it would seem to follow that the way to find the total register for which budget provisions should be made would be to estimate what the register will be in each school for the period in question, and then to combine for the system as a whole these several estimated registers of the different schools.

(a) *Difficulty of Forecasting Total Register.*—To forecast from two to eighteen months in advance with sufficient reliability for budget purposes the probable total register of each of the several schools in the system is an impossible task. To be sure, in some elementary schools of the city the register from month to month and from year to year remains about the same. In such a school it is easy to forecast the total register. Table II shows the total register as of September 30th for the years 1907-1911 in one school of each of the boroughs:

¹ See Report of the Committee of the National Educational Association on Uniform Blanks and Uniform School Reporting.

² The estimate of the Board of Education is prepared as a rule early in July, prior to the given budget year.

Table II—Register in Schools Having Practically Static Register

Public School	1907	1908	1909	1910	1911
	Register	Register	Register	Register	Register
21 Manhattan.....	2,082	2,108	2,091	2,064	2,079
18 The Bronx.....	904	903	880	924	922
9 Brooklyn.....	922	955	927	967	934
11 Queens.....	846	861	833	831	863
1 Richmond.....	624	648	672	650	639

The variation September over September from year to year in the foregoing schools, it will be observed, is small. In consequence, it is easy to forecast with exactness the register of such schools one or even two years in advance. In most of the elementary schools of the city there is, however, a wide range in the total register from year to year. Table III shows the register as of September 30th for the years 1907-1911 in certain schools in the principal boroughs:

Table III—Register in Schools Having Variable Register

Public School	1907	1908	1909	1910	1911
	Register	Register	Register	Register	Register
30 Manhattan.....	1,991	1,785	1,760	1,810	1,739
49 Manhattan.....	1,893	1,792	1,492	1,357	1,245
169 Manhattan.....	1,563	1,606	1,749	1,842	1,940
171 Manhattan.....	3,547	3,668	3,743	3,090	3,449
28 The Bronx.....	2,056	2,263	2,431	2,661	2,652
30 The Bronx.....	1,975	1,758	2,200	2,693	2,670
37 The Bronx.....	2,253	1,841	2,145	2,191	2,270
40 The Bronx.....	2,314	2,557	2,717	2,999	3,983
45 Brooklyn.....	1,868	2,051	1,647	1,700	1,510
55 Brooklyn.....	2,179	2,416	2,002	2,305	2,528
144 Brooklyn.....	4,021	3,884	2,840	3,173	3,422
149 Brooklyn.....	4,248	4,789	4,402	4,467	4,362

The changes in the total register in the foregoing schools September over September from year to year are representative of the changes which occur September over September from year to year in the total register of a majority of the elementary schools of the city. Comparison of one year with another will reveal the fact that there is little uniformity in the rise or in the fall of the total register of a particular school. P. S. 30, The Bronx, is illustrative. The total register of this school September 30, 1907, was 1,975; there was a fall in 1908 to 1,758,

a rise in 1909 to 2,200, a further rise to 2,693 in 1910, and then a decline in 1911 to 2,670.

Many influences act and react to affect the total register of a given school. The opening of a new school in the neighborhood; the erection of new tenements and the razing of old ones in the immediate vicinity or in distant parts of the city; the erection of new factories and the removal of old ones, both near by and in remote sections; alterations in the character of buildings, for example, change of tenements into lofts and vice-versa; public improvements, such as the erection of new dock facilities and improvements in transportation; the organization of new companies, such, for example, as improvement companies; changes in the rent rate; changes in the policy of the Board of Education; increase or decrease in immigration; and so on, from a coal strike in Pennsylvania to a European war.

So numerous are the factors affecting the total register of a given school that it is impossible for a principal to know what the effects of these factors will be; in consequence, it is impossible for a principal to forecast with exactness two to eighteen months in advance the total register of his or her school. For example, on the basis of the increase in the total register of P. S. 30, The Bronx, September 30, 1907, over September 30, 1906 (approximately 281), the principal would have probably estimated the register as of September 30, 1908, at 2,200, but the actual total register as of that date was 1,758. Similarly, since there was a decrease in the total register of September 30, 1908, over 1907 of 217, it would have been reasonable to have estimated the register as of September 30, 1909, at something less than or at 1,758, whereas the actual total register as of the given date was 2,200. Since there was an increase of over 400 in the register of September 30, 1909, over 1908 and of 1910 over 1909, respectively, there were seemingly good grounds for estimating the register of September 30, 1911, at 3,000, but the actual register as of that date was even less than the register as of September 30, 1910, being only 2,670.¹

(b) *Difficulty of Forecasting Distribution of Register.*—The greatest difficulty in attempting to forecast in advance the needs of a particular elementary school is not, however, in attempting to estimate the total register, but in attempting, as must be done, to forecast the probable distribution of the estimated total register. For, as we will see, the number of teachers needed in a given school and that can be used is not determined by the total register to be cared for only, but determined also by the way in which the total register distributes itself among the several grades and kinds of special classes, and by the particular conditions with respect to the size of class existing in the school at a given time.

Table IV shows for P. S. 186, Manhattan, by grades, the register

¹ By considering other factors these estimates might have been somewhat modified.

and the number of regular classes as of September 30th for the years 1907-1911:

Table IV—Register and Classes in P. S. 186, Man., September 30th, by Grades for Five Years

Grades	1907		1908		1909		1910		1911	
	Register	Classes	Register	Classes	Register	Classes	Register	Classes	Register	Classes
8B.....	105	3	110	3	109	3	128	3	137	3
8A.....	103	3	108	3	159	4	134	4	133	4
7B.....	110	3	149	4	136	3	151	4	147	4
7A.....	139	3	149	4	152	4	135	4	165	4
6B.....	94	3	98	2	127	3	151	3	171	4
6A.....	120	3	131	3	125	3	162	4	189	4
5B.....	120	3	156	3	159	4	176	4	170	4
5A.....	135	3	160	3	196	4	154	4	155	4
4B.....	142	3	181	4	155	3	154	3	185	4
4A.....	123	3	194	4	142	3	129	3	175	4
3B.....	128	3	131	3	148	3	142	3	169	4
3A.....	132	3	127	3	121	3	163	4	173	4
2B.....	100	2	118	2	119	3	131	3	143	3
2A.....	123	2	127	2	164	4	146	3	151	3
1B.....	90	2	106	2	132	3	125	3	98	2
1A.....	112	2	156	3	162	3	168	3	171	3
Total.....	1,876	44	2,201	48	2,306	53	2,349	55	2,532	58

There was, it will be observed, an increase in the total register of the regular classes of P. S. 186, Manhattan, September 30, 1908, over September 30, 1907, of 325 pupils. This increase was not, it will be noted, confined to the 1A grade, and hence to an increase in the number of beginners, but was distributed among all the different grades with the exception of the 3A grade, in which there was a decrease. Similarly, with each of the other years in question, each year shows over the preceding year a total increase in the register; this increase is not confined, however, to any one grade, but is distributed irregularly among several grades, and is accompanied in certain grades by an actual decrease in register; as a result in a given grade there will be a decided increase one year, to be followed the next by as decided a decrease. To illustrate: The 7B's of September 30, 1907, are the 8B's of September 30, 1908. There were 110 7B's in 1907 and the same number of 8B's in 1908; whatever losses there were from the 7B's in advancing to the 8B grade were made up by the entry of new pupils. In contrast, there were 149 7B's in 1908 and only 109 8B's in 1909, a net loss of 40. Similarly, the 3B's of one year are the 4B's of the following year. There were in 1907 128 3B's and in 1908 181 4B's, an increase of 41 per cent. There was, however, an increase of only 18 per cent. in the number of

4B's in 1909 over the 3B's of 1908, an increase of only 4 per cent. in 1910 over 1909, but an increase of 30 per cent. in 1911 over 1910. To foretell what the gains or losses will be year over year among pupils in advancing from the A or B grade of one year to the A or B grade of the next year and to foretell such erratic increases and decreases in the register of the same grade year over year is obviously impossible. Hence, it is impossible to forecast with exactness the distribution of a total estimated register for a particular school among the several grades and kinds of special classes of the given school.

(c) *Difficulty of Forecasting Teachers Needed.*—A still more impossible task, but a task which must be essayed when the individual school is made the unit, is to attempt to foretell in what grades there will be such an increase in register as to necessitate the formation of an additional class and in what grades there will be such a decrease in register as to permit of the consolidation of classes. When the actual register of September 30, 1909, of P. S. 186, Manhattan, is compared, grade for grade, with the register of September 30, 1908, it will be observed that there were such increases in grades 6B, 5B, 5A, 2B, and 1B as to necessitate the formation of one or more additional classes, whereas in the grades of 4B and 4A there were such decreases as to permit of the reduction by one of the number of classes in these grades.

Further, it will be observed that whether the number of classes in a given grade is increased or decreased does not depend so much on the particular increase or decrease in register as on the size of the classes in the particular grade in the preceding year. For example, the increase in the 5B register in 1909 over 1908 was only three, but the size of the classes in this grade in the preceding year was such that there was need of an additional class, whereas there was an increase in 1908 over 1907 of thirty-six in the number of 5B pupils; yet the size of class was such that this increase of thirty-six pupils was cared for without increasing the number of 5B classes. Again, there was an increase in 1911 over 1910 of twenty-seven pupils in the 6A grade, but this increase was cared for without increasing the number of 6A classes; yet to care for exactly the same increase of 3B pupils (27), it was necessary to organize an additional 3B class.

Moreover, it must be borne in mind that at the time it is necessary to make the budgetary estimate, for example, the estimate for P. S. 186 for September, 1911, the latest available data are the data of September, 1909. A comparison by grades of the actual register and number of classes as of September 30, 1911, in P. S. 186, with the actual register and number of classes as of September 30, 1909 will reveal the difficulty of forecasting by grades on the basis of data no later than September, 1909, the register and number of classes as of September 30, 1911. To be sure, there are data at hand up to and including May 31, 1910. A comparison, however, by grades of the actual register and number of classes in P. S. 186, Manhattan, as of May 31,

1910, with the actual register and number of classes as of September 30, 1911, will show that data as of May 31st are of but slight aid in forecasting by grades the register and number of classes as of September 30th of the succeeding year. The following table shows by grades for P. S. 186, Manhattan, the register and number of classes as of May 31, 1910, and as of September 30, 1911:

Grades	May 31, 1910		Sept. 30, 1911	
	Register	Classes	Register	Classes
8B.....	138	3	137	3
8A.....	129	3	133	4
7B.....	148	4	147	4
7A.....	149	4	165	4
6B.....	126	3	171	4
6A.....	159	4	189	4
5B.....	153	4	170	4
5A.....	170	4	155	4
4B.....	145	3	185	4
4A.....	149	3	175	4
3B.....	129	3	169	4
3A.....	133	3	173	4
2B.....	158	4	143	3
2A.....	129	3	151	3
1B.....	152	4	98	2
1A.....	123	2	171	3
Total.....	2,290	54	2,532	58

(d) *Cost of Instruction as Basis of Estimating Need.*—Finally, there are those in authority, especially those having to do wholly with finance, who, failing to recognize the ever-changing character of the inner organization of the school, hold, while it may be impracticable to attempt to estimate from two to eighteen months in advance the register and number of classes, that the actual cost of instruction in a given school for past months and past years supplies a reliable basis of estimating the financial provisions which should be made for a given school in a given budget.

Table V shows for Manhattan, Brooklyn, and The Bronx the register and the expenditure for instruction in certain schools in September for the years 1907-1911:

Table V—Register and Expenditure for Instruction in September for Five Years

Schools	30 Manhattan		30 Bronx		45 Brooklyn		21 Manhattan		18 Bronx		9 Brooklyn	
Year	Reg- ister	Expendi- ture	Reg- ister	Expendi- ture	Reg- ister	Expendi- ture	Reg- ister	Expendi- ture	Reg- ister	Expendi- ture	Reg- ister	Expendi- ture
1907	1,991	\$5,067.71	1,975	\$3,248.99	1,868	\$4,392.95	2,082	\$4,942.84	904	\$2,110.48	922	\$2,974.80
1908	1,785	4,950.12	1,758	3,213.85	2,051	4,652.93	2,108	4,852.75	903	2,123.11	955	2,903.53
1909	1,760	4,827.50	2,200	3,549.99	1,647	4,389.74	2,091	4,580.09	880	2,039.33	927	2,861.42
1910	1,810	5,007.35	2,693	4,337.77	1,700	3,990.91	2,064	4,759.64	924	2,007.19	967	2,784.46
1911	1,739	5,228.09	2,670	4,800.99	1,510	3,973.29	2,079	4,733.71	922	2,106.44	934	2,729.67

The cost of instruction in a given school varies from month to month and from year to year with the register, the number of classes, and with the salaries of the particular teachers employed. The number of teachers needed to care for the same total register varies with the particular distribution of the register; the number of classes in a given school may be greatly increased or decreased one year over another; so also may the salaries of a given number of teachers for one year be much smaller or much greater than the salaries for the same number of teachers at another time. Hence, the cost on the side of instruction of operating a school one year is no reliable index of what it will cost for instruction in the same school the following year.

(e) *Unnecessary to Estimate Register of Individual School.*—Apart from the practical difficulties involved in attempting to estimate the register of a particular elementary school, there is no reason from a budgetary or educational point of view why the individual school should be made the unit in estimating the register for which financial provisions are requested. Children are handled in the elementary schools by grades, and a teacher is needed for each class, irrespective of the school in which the class may happen to be. In consequence, if budget provisions are made to care for the total estimated register for the system as a whole, teachers may be employed by the educational authorities and assigned by these authorities according as they are needed. Whether or not all the teachers for whom budget provisions are made will actually be required and the exact number of teachers it will be necessary to assign to a particular school, are *administrative questions* which can be answered only in view of the conditions in each of the several elementary schools.

(f) *Summary.*—It is, therefore, impracticable to make the individual school the unit in estimating the register for which budget provisions are requested, because:

(1) It is impossible, in the case of the great majority of the elementary schools of the city, to forecast with any considerable reliability

from six to eighteen months in advance what the total register of respective schools will be.

(2) It is impossible to forecast with any considerable reliability what the distribution of the estimated total register for a given school among the several grades and kinds of special classes will be.

(3) It is impossible to forecast with any considerable reliability in what grades there will be such increases in register as to necessitate the formation of additional classes and in what grades there will be such decreases in register as to permit of the consolidation of classes; hence, it is impossible to forecast with any considerable reliability the number of teachers needed in a given school.

(4) There are neither budgetary nor educational reasons why it is necessary to make the individual school the unit in estimating the register for which budget requests are made; to determine the actual needs of a given school at a given time is an *administrative* and not a *budgetary* question.

2. THE ENTIRE SYSTEM AS THE UNIT.—(a) *Relative Simplicity of Making the Estimate*.—When the system as a whole is made the unit in estimating the register, it is possible to ignore those factors within the city and within the school system which affect the probable register of the particular school (see p. 533). To be sure, the basis of estimating the total register, when the unit is the entire system as a whole, is the particular past registers of the several elementary schools combined. But it should be noted that the factors which cause the total combined register of all the elementary schools of the system to increase or to decrease, hence that affect what the total register of the system as a whole will be two to eighteen months in advance, are very different from the factors, such as the foregoing, which act to determine the particular distribution of this total register among the several elementary schools. In a word, in attempting to estimate two to eighteen months in advance the total register of a particular elementary school it is necessary to take into account both the factors which act to increase or to decrease the total register of the system as a whole, and especially the particular effect of these factors on the register of the given school; it is also necessary to take into account those factors which affect the distribution of pupils among the several schools of the system, and these are by far the more important factors to consider, whereas in attempting to forecast the total register of all the elementary schools of the system it is only necessary to consider those factors which act to increase or to decrease the register of the system as a whole. To estimate the total register for the system as a whole is, therefore, a much simpler task than to attempt to estimate the total register of a particular school.¹

(b) *Relative Exactness of the Estimate*.—The total register of all elementary schools combined can be estimated with greater relative

¹ For the same reason, it is a simpler task to estimate the register for the system as a whole than to estimate the register of a particular district.

exactness than the total register of a particular elementary school. Data to prove this are not at hand; there are, however, available facts which go far toward doing it.

(1) It is an accepted principle that the variations in the group are less than the variations in the individual. When applied to the schools this principle would suggest that the variations month by month and year by year in the register of the system as a whole are less than the variations month by month and year by year in the register of a particular school. Table VI shows the per cent. of increase or decrease year over year in the register of certain schools as of September 30th for the years 1907-1911, also the same facts for the system as a whole:

Table VI—Variation in Register of Individual Schools Versus Variation in Register of Entire System

School No.	Borough	1907	1908	1909	1910	1911				
		Register Sept. 30	Register Sept. 30	Per Cent. of In- crease over or De- crease from 1907	Register Sept. 30	Per Cent. of In- crease over or De- crease from 1908	Register Sept. 30	Per Cent. of In- crease over or De- crease from 1909		
GROUP I										
21	Man.	2,082	2,108	1.25	2,091	-.81	2,064	-1.29	2,079	.73
18	Bx.	904	903	-.11	880	-2.55	924	5.00	922	-.22
9	Bkn.	922	955	3.58	927	-2.93	967	4.31	934	-3.44
11	Qu.	846	861	1.77	833	-3.25	831	-.24	863	3.85
1	Rich.	624	648	3.85	672	3.70	650	-3.27	639	-1.69
GROUP II.										
30	Man.	1,991	1,785	-10.35	1,760	-1.40	1,810	2.84	1,739	-3.92
49	Man.	1,893	1,792	-5.34	1,492	-16.74	1,357	-9.05	1,245	-8.25
169	Man.	1,563	1,606	2.75	1,739	8.90	1,842	5.32	1,549	-5.32
171	Man.	3,547	3,668	3.41	3,743	2.04	3,090	-17.45	3,449	-11.61
28	Bx.	2,056	2,263	10.07	2,431	7.42	2,661	9.46	2,652	-.34
30	Bx.	1,975	1,758	-10.99	2,200	25.14	2,693	22.41	2,670	-.85
37	Bx.	2,253	1,841	-18.29	2,145	16.51	2,191	2.14	2,270	3.61
40	Bx.	2,314	2,557	10.50	2,717	6.26	2,999	10.38	3,983	32.81
45	Bkn.	1,868	2,051	9.80	1,647	-19.70	1,700	3.22	1,510	-11.18
55	Bkn.	2,179	2,416	10.88	2,002	-17.14	2,305	15.13	2,528	9.67
144	Bkn.	4,021	3,884	-3.41	2,840	-26.88	3,173	11.73	3,422	7.85
149	Bkn.	4,248	4,789	12.74	4,402	-8.08	4,467	1.48	4,362	-2.35
Entire Elementary School System.....		596,737	618,433	3.64	634,907	2.66	648,691	2.17	658,843	1.56

The schools included under Group I are representative of the schools in the system which remain with respect to register more or less the same from year to year (see p. 532). It will be observed that of the five schools included under Group I the variation in the increase or decrease in register for the years in question is the smallest in P. S. 21,

Manhattan, in which school there was a variation in register from a decrease of 1.20 per cent. to an increase of 1.25 per cent., or a range in variation of 2.54 per cent.; but even this variation is larger by .46 of 1 per cent. in its range than the variation in the increase in the register of the system as a whole, 2.08 per cent.

The schools included in Group II are representative of the schools in the system in which the register changes considerably from year to year. (See p. 532). Of the twelve schools in Group II, the smallest range of variations during the years in question was in P. S. 169, Manhattan; the range of variation here was 6.15 per cent., which is larger than the range of variation in the system as a whole (2.08 per cent.) by 4.07 per cent. The highest range of variation in this group was in P. S. 144 the Bronx, 38.01 per cent., which is larger than the variation in the city as a whole by 36.53 per cent.

Obviously the wider the variation, the greater the difficulty of forecasting the register with exactness. No one will doubt that it is easier to forecast with exactness the register of a school like P. S. 21 Manhattan, than to forecast the register of a school like P. S. 144, Brooklyn. On the same grounds and for the same reasons, since the range of variation in the register of the system as a whole is probably less than the range of variation in the register of the least variable school in the system: it is easier to forecast with exactness the register of the system as a whole than the register of a particular school.¹

(2) In the preparation of the budget estimate of 1912, the several principals of the elementary schools were asked to estimate for their respective schools, the register for which budget provisions were to be requested. While the blanks used in collecting and tabulating the data with respect to register, attendance, etc., were uniform for the city as a whole,² an examination of the estimates of the several principals fails to reveal any uniformity in the method employed in making the estimates.

The estimated register of the several elementary schools when combined was for December 31, 1911, 671,272.³ The actual total register of the elementary system as a whole for December 31, 1910, was 644,685. Hence, the estimated increase in register of December 31, 1911, over December 31, 1910, was 26,587. The actual increase in the register of the system as a whole for

December 31, 1910, over 1909	was	16,734;
December 31, 1909, " 1908	"	19,130;
December 31, 1908, " 1907	"	14,810;
December 31, 1907, " 1906	"	21,836;
December 31, 1906, " 1905	"	23,031,

¹ For the same reason the register for the system as a whole can be forecasted with greater exactness than the register of a particular district.

² See Blank and Estimates on file at the office of the City Superintendent of Schools.

³ From President Winthrop's letter to President Mitchel, dated September 1, 1911. See also Estimates of the Board of Education for 1912.

or an actual average annual increase in the system as a whole for the five-year period for December over December of 19,108; the actual increase of December 31, 1911, over December 31, 1910, was 11,913.

The estimated increase of 26,587 in the register of all elementary schools for December 31, 1911, over December 31, 1910, was, therefore, larger by 3,556 than the highest actual annual increase in the system as a whole, December over December, for any one of the years between 1905-1910; it was larger by 7,479 than the actual average annual increase in the system as a whole for the five years, 1905-1910, and it was larger by 14,674 than the actual increase of December 31, 1911, over December 31, 1910.

Further, the increase of December 31, 1912, over December 31, 1911, was estimated at 35,377, which was higher by 16,269 than the actual average annual increase for the five years 1905-1910 (19,108) and higher by probably 23,000 than the actual increase in the system as a whole of December 31, 1912, over December 31, 1911. (The actual increase of December 31, 1912, over December 31, 1911, will doubtless be even less than 12,000.)

Had the estimated register of December 31, 1911, and for December 31, 1912, been based on the actual increase December over December for a series of years in the register of the system as a whole and on conditions affecting the increase, these increases in register would not have been estimated at 26,587 and 35,377, respectively. At most, the actual average annual increase for the five years 1905-1910 (19,108) would probably have been taken as indicative of the probable increase. At all events, there was nothing in the actual annual increase year over year in the register of the city as a whole or in the conditions affecting the total register of the system to justify such increases as were estimated when the individual school was made the unit in making the forecasts.

These exaggerated estimated increases in the register when the individual school was the unit of the forecast and principals were relatively free to make their estimates in their own way illustrate how inexact such estimates are and how more exact estimates could easily have been made on the basis of the increase year over year for a series of years in the register of the system as a whole.

(c) *Only Estimate Necessary.*—Finally, even were it possible to estimate the register of a given school with the same relative exactness as the total register of the system as a whole, even then, in order to determine the total register for which budget provisions are to be made, it would be unnecessary and inadvisable to attempt to estimate the register of the several schools and to combine these several estimates to obtain the total register. It is possible, to be sure, to study the increase or the decrease in the total register of a particular school and to give the reason why the actual average increase or decrease for two, or three, or four years is used as the basis of the estimate, or it is possible to use

any other method and to give the reason therefor. In this case, however, there would be some 500 different estimates to verify and check.

But the more accurate these estimates for the individual schools, that is, the more nearly the estimated register of a particular date corresponded to the actual register of the given date, the more nearly these combined estimates for the individual schools would correspond to an accurate estimate for the system as a whole based on the entire system as the unit. Indeed, by reason of the fact that the register of the system as a whole is but the combined total of the register of each of the several schools of the system and all increases as well as all decreases in the registers of the particular schools are reflected in the total register of the entire system, it follows that, if the estimates for a given date for the several schools were absolutely exact and the estimate for the system as a whole for the same date was absolutely exact, the sum of the several estimates for the individual schools would exactly equal the total estimated register for the system as a whole. The foregoing is mathematically true, hence needs no supporting data.

There is, therefore, no need of making some 500 separate estimates to be verified, checked and combined in order to obtain the total estimated register for all elementary schools when this can be obtained even more accurately through one estimate based on the entire system as a unit.

Again, should it seem unwise to permit each principal to make the estimate for his or her school in his or her own way, and should principals be directed to proceed in a uniform way in making the estimates for their respective schools—directed, for example, to use in estimating the possible increase or decrease, the actual average annual increase or decrease for two, or three, or four years, or whatever the method—it follows from the relation between the total register and the register of the particular schools, providing the method used was the same in both cases, that the estimated register of the individual schools combined would be the same as the estimated register for the system as a whole when the entire system is made the unit. The truth of this is illustrated in the following table.

Table VII shows for each of the several schools of District 22, Manhattan, the estimated register for September, 1909, 1910, and 1911, when the individual school is the unit and when the actual average annual increase in register September over September for three years is made the basis of estimating the increase; it also gives the estimated register of the several schools for the respective years combined. The table shows, besides, the estimated register for District 22 as a whole, for the corresponding month and year, when the entire district is the unit, and the estimate for the district as a whole is made in the same way as the estimates for the individual schools:

Table VII—Estimates for Individual Schools Versus Estimate for District as a Whole

SEPTEMBER REGISTER FOR THE SEVERAL SCHOOLS IN DISTRICT 22, MANHATTAN										
School Number	Actual							Estimate for		
	1905	1906	1907	1908	1909	1910	1911	1909 Based on Average Annual Increase 1905-08	1910 Based on Average Annual Increase 1906-09	1911 Based on Average Annual Increase 1907-10
5	2,879	3,095	2,928	3,154	2,955	2,938	2,858	3,246	2,908	2,941
46	2,334	2,462	2,476	2,738	2,572	2,584	2,377	2,873	2,609	2,620
52	161	167	181	220	223	268	370	240	242	297
132	266	376	893	1,178	1,432	1,769	2,092	1,482	1,784	2,061
169	1,081	1,148	1,563	1,606	1,749	1,842	1,940	1,781	1,949	1,935
186	1,418	1,676	1,950	2,320	2,434	2,492	2,655	2,621	2,687	2,673
192	812	847	986	965	933	904	968	1,016	962	877
FOR THE SEVERAL SCHOOLS COMBINED										
Total....	8,951	9,771	10,977	12,181	12,298	12,797	13,260	13,259	13,141	13,404
FOR DISTRICT 22 AS A UNIT										
Dist. 22	8,951	9,771	10,977	12,181	12,298	12,797	13,260	13,258	13,140	13,404

Whether principals are to be left free to estimate the register of their respective schools or whether they are directed to proceed in a uniform way in making their respective estimates, or whatever the method employed in making the estimates for individual schools, there is nothing whatever from a budgetary point of view to be gained, unless it is the useless and probably impossible task of attempting to verify and check some 500 different estimates.

In preparing the budget estimate for 1913 the register for which provisions were requested was estimated for each of the several districts separately and these several estimates were combined.¹ What is true of the estimates for the several schools of the system is equally true of the estimates for the several districts of the system. Hence, in preparing a budget estimate it is not only unnecessary to attempt to estimate the register of the several districts, but to do it is needless work.

(d) *Summary.*—The system as a whole should be made the unit in estimating the register for which budget provisions are requested, because:

(1) It is a simpler task to estimate the register for the system as a whole than to estimate the register for the individual school or for a particular district.

¹ See Budget Estimate of Board of Education for 1913.

(2) The register for the system as a whole can be estimated with greater relative exactness than the register of the individual school of the particular district.

(3) By reason of the relation between the total register of the system as a whole and the total register of the individual schools, and of the particular districts, even if the estimate for the individual school or the particular district could be made with the same relative exactness as the estimate for the system as a whole, there is no need of making some 500 or even 40 separate estimates to be verified, checked and combined in order to obtain the total register for which budget provisions are to be requested, when this can be determined quite as well and even more exactly through one estimate based on the entire system as the unit.

V. Estimating the Total Register for the Entire System

The problem of determining the needs of the elementary schools for which budget provisions are to be made resolves itself, therefore, from this point of view, into the problem of finding some simple and reliable way of estimating the total register of the entire system of elementary schools for the budget period in question.

1. *Total Register a Variable.*—If the total register of the entire elementary school system remained the same from year to year and from month to month, or if the increase from year to year and from month to month, were regular, it would be an easy task to estimate the register for which budget provisions should be made. But the total register of the system as a whole changes from year to year and from month to month, and the increases year over year and from month to month differ materially.

Table VIII shows for each of the years 1902-1911, inclusive, the total register for the entire elementary school system as of December 31st, the increase December over December, and the per cent. of increase December over December; it also shows the same facts for May 31st:

Table VIII—Increases in Register of Entire System Year Over Year

REGISTER AS OF DECEMBER 31ST				REGISTER AS OF MAY 31ST		
Year	Register	Increase of Each Year Over Preceding Year	Per Cent. of Increase of Each Year Over Preceding Year	Register	Increase of Each Year Over Preceding Year	Per Cent. of Increase of Each Year Over Preceding Year
1902.....	477,403			445,964		
1903.....	514,424	37,021	7.75	475,312	29,348	6.58
1904.....	533,518	19,094	3.71	509,969	34,657	7.29
1905.....	549,144	15,626	2.93	525,431	15,462	3.03
1906.....	572,175	23,031	4.19	543,967	18,536	3.53
1907.....	594,011	21,836	3.82	565,078	21,111	3.88
1908.....	608,821	14,810	2.49	587,465	22,387	3.96
1909.....	627,951	19,130	3.14	603,144	15,679	2.67
1910.....	644,685	16,734	2.66	620,422	17,278	2.86
1911.....	656,598	11,913	1.85	633,231	12,809	2.06

In a word, the total register of the elementary school system is a variable, that is, is a quantity which changes from month to month throughout the school year, and which increases year over year and month over month by different amounts. *To forecast from two to eighteen months in advance with absolute exactness such a variable as the total register of all elementary schools is impossible.*

2. *The Science of Forecasting.*—The science of forecasting is, to be sure, highly developed. This science deals, however, with constants or with variables, which increase or decrease uniformly and which act according to fixed and known mechanical laws, such, for example, as the movement of planets, of falling bodies, dispersion of light, chemical action and reaction, etc. The science of forecasting as developed and applied to astronomy, physics and chemistry makes, however, no pretense of being able to forecast a variable such as population, production of cereals, prices, etc., variables similar to the register of the elementary school. So also is the science of forecasting as applied to insurance highly developed. In insurance, however, it is possible to deal with classes or groups; for example, from the study of many individual cases it is found that persons forty-two years of age will, on the average, continue to live 26.7 years. While this is true for the forty-two-year-old group, how long a given individual within this age group will actually continue to live it is impossible to foretell, and for purposes of insurance it is not necessary to know. But for budget purposes we must know the register of the elementary schools as a whole as of a given date. The science of forecasting as developed and applied to science and to insurance is, therefore, not applicable to forecasting such a variable as the school register, because such a variable is not controlled by known laws, hence is not uniform in its increases or decreases, and because we cannot deal with averages for a long series of years, but must deal with a specific register of a given month and year.

Even though there is no science of forecasting applicable to estimating such a variable as the register of the elementary school, it is nevertheless necessary for budget purposes to make such a forecast. The problem of forecasting the register of the elementary schools resolves itself, therefore, into one of devising some practical and reliable way, *not scientific in the sense of being absolutely exact, of making the necessary forecasts.*

3. *The Estimates to Be Made.*—In small school systems there is, as a rule, little change in the total register after September. In consequence, if teachers are provided to care for the September register, these teachers are generally able to care for the register of the other months of the given school year. This is, however, not the case in the City of New York.

Table IX shows for the years 1907-1911 the total register of the elementary schools as of September 30th, the increase year over year in the September register, the number of classes as of September 30th,

and the increase year over year in the number of September classes; it shows the total register as of December 31st, the decrease in the December register from the register of the preceding September, the number of classes as of December 31st, and the increase in the number of December classes over the number in the preceding September; the table shows also these same facts for February 28th and for May 31st:

Table IX—Decreases in Register Versus Increases in Number of Classes

SEPTEMBER 30TH					DECEMBER 31ST			
Years	Register	Increase in Register of Each Year Over Preceding Year	No. of Classes	Increase in Number of Classes of Each Year Over Preceding Year	Register	Decrease in Register of December from Preceding September	No. of Classes	Increase in Number of Classes in December Over Preceding September
1907.....	596,737	19,167	14,031	675	594,011	2,726	14,204	173
1908.....	618,433	21,696	14,566	535	608,821	9,612	14,660	94
1909.....	634,907	16,474	15,780	214	627,951	6,956	14,895	115
1910.....	648,691	13,784	15,205	425	644,685	4,006	15,285	80
1911.....	658,843	10,152	15,735	530	656,598	2,245	15,817	82
FEBRUARY 28TH					MAY 31ST			
Years	Register	Decrease in Register of February from Preceding September	No. of Classes	Increase in Number of Classes of February Over Preceding September	Register	Decrease in Register of May from Preceding September	No. of Classes	Increase in Number of Classes in May Over Preceding September
1908.....	591,871	4,866	14,019	—12	587,465	9,272	14,128	97
1909.....	605,793	12,640	14,700	134	603,144	15,289	14,697	131
1910.....	623,095	11,812	14,951	171	620,422	14,485	15,059	279
1911.....	638,234	10,457	15,281	76	633,231	15,460	15,441	236
1912.....	650,258	8,585	15,817	82	646,096	12,747	15,896	161

It will be observed that in each of the years in question there was a decrease in the total register of the elementary schools from September to December, from December to February, and from February to May. In 1907 there were 9,272 less pupils on the register in May than in the preceding September; in 1908, 15,289; in 1909, 14,485; in 1910, 15,460; and in 1911, 12,747. In a word, the total register of the elementary schools is the largest in September, and this decreases gradually

each month after September throughout the school year.¹ It would, therefore, seem, even in the City of New York, that if provisions were made to care for the September register, such provisions would provide adequately for the register of each of the subsequent months of the given school year. Were this true, it would only be necessary in determining the register for which budget provisions were to be made to estimate the register of September over September and make the estimated September register the basis of the budget estimate.

It will be observed, however, that the movement in the number of classes is the reverse of the movement in register, that is, there is an increase in the number of classes from September to December, from December to February, and from February to May. In 1907 there were 97 more classes in May than in the preceding September; in 1908, 131; in 1909, 279; in 1910, 236, and in 1911, 161. In short, in a given school year the number of classes is the smallest in September and this number increases gradually each month after September throughout the school year.²

These changes in the number of classes, hence in the number of teachers required, indicate that the needs of the elementary schools change from month to month. Consequently, in making budget provisions for the elementary schools, it is not possible to base the budget estimate on the estimated September register only. Budget provisions based on the estimated September register, by reason of the fact, as shown above, that a large number of classes are organized year after year to care for a smaller register, would not provide adequately for the register of October or of November, or of December, or for the register of any other subsequent month. Hence, if adequate budgetary provisions are to be made for the elementary schools, it is necessary *to estimate the total register of the elementary school for each month of the school year in question* and to determine the needs of the schools for the respective month in view of the number of classes it will be necessary to organize in the given month to care for the given estimated register.

To those unfamiliar with school work, it might seem that the foregoing increase month by month in the number of classes in face of the decrease month by month in register was due to maladministration. An increase in the number of classes, despite the decrease in the total register, is to be expected in a system of elementary schools such as that of the City of New York for the following reasons:

First, in a system of schools as large as that of the City of New York, and in which there are such radical and unforeseen changes in the register of particular schools, it takes some time after the opening

¹ Now and then the November register is slightly larger than the September register. See Report on Register by Months on file at the office of the City Superintendent of Schools.

² There is now and then an exception to this general statement as will be noted.

of the schools in September to adjust the school to the new conditions. In certain cases principals delay the consolidation of two small classes into one, expecting that these small classes will be increased in size by the entry of new pupils. In certain other cases principals delay the division of large classes, waiting to see whether or not it will prove necessary to form a new class, and even when the principal has decided to request a reduction or an increase in the number of classes in his or her school, it takes some little time to get the proper administrative machinery in motion to secure an indorsement of his or her request. As a result, owing to the number of changes to be made at the beginning of each school year in class organization, owing to the uncertainty with reference to the propriety of certain changes, and owing to the administrative delays incident to such changes, the number of classes as of September 30th does not necessarily represent the number of classes that should be organized to care for the register as of that date. Hence, the number of classes as of September 30th is not a reliable index of the number of classes needed to care for a given register.

Second, there is, to be sure, a decrease month by month in the total register of the elementary schools, but it should not be thought that the register, for example, of October 31st, is the register of September 30th, less a few pupils who have here and there dropped out of school. The register at the end of any one month of the school year, with the possible exception of June, is the net sum of the pupils on the register who have continued in school from the preceding month, plus thousands of pupils who have entered school during the given month, less thousands of pupils who have dropped out of school during the given month. Data are not at hand to show month by month with exactness the gains from pupils entering and the losses from pupils dropping from school. Data are at hand, however, which serve to illustrate the point.

During the February-June term, 1911, 30,995 pupils, exclusive of those leaving for private or parochial schools or for schools of other cities, dropped out of the regular classes of the elementary schools;¹ there is no reason to believe that a similar number of pupils did not drop from school during the preceding September-January term. The probabilities are, therefore, that approximately 61,990 pupils dropped out of the regular classes of the elementary schools of the city during the school year 1910-1911. If to this number there are added the 16,746 pupils who graduated in January, 1911, there was a total of approximately 78,736 pupils who were on the register sometime during the year, but who were not on the register June 30, 1911. The register of June 30, 1911, was 38,135 less than the register of September 30, 1910. In view, therefore, of a loss of at least 78,736 pupils from the register between September and June, in order that the register of June 30, 1911, should be only 38,135 less than the register of September 30, 1910, approximately 40,000 children must have entered school between

¹ See Report on Promotion, Non-Promotion and Part-Time, p. 105-110.

these two dates. Or, speaking in broad and general terms, approximately 8,000 children drop from school on the average each month of the school year, and approximately 4,000 new pupils enter.

In considering these losses and gains with reference to the number of classes required to care for a given register two points should be kept in mind: the losses are on the whole distributed more or less evenly throughout the schools of the entire city,¹ whereas the pupils entering or the gains are to a greater or lesser extent confined to relatively few schools and districts.² Since the losses are more or less evenly distributed, it should be apparent that by four or five pupils dropping out of each school the total register for all elementary schools for a given month would be materially lessened; yet it might be that it would be impossible to reduce the total number of classes required to care for the total register. Indeed, it so happens that the net loss of a school may be as high as twenty-three pupils from one month to another; yet it may be necessary to add an additional class, whereas in the same school the net loss from one month to another may run as high as ninety-one pupils, but still it may be impossible to reduce the number of classes.³ Since the pupils entering school or the gains are confined principally to relatively few schools and districts, it should be obvious that the losses from other schools and districts more or less remote affect very little, if at all, the number of classes to be organized to provide for such pupils.

Third, the losses and the gains are not at the same point, that is, are not in the same grades. For example, P. S. 169, Manhattan, shows for October 31 over September 30, 1911, a net gain of six pupils. There was, however, in the 6B and the grades below the 4A a total gain of forty-two pupils, whereas in the D class and the grades above the 4A there was a total loss of thirty-six pupils. These losses in certain grades obviously do not aid in caring for the gains in certain other grades, indeed, to care for the net increase of seventeen pupils in the 1A grade it was necessary to add an additional class. Contrariwise, P. S. 169, Manhattan, shows from February 28 to March 31, 1912, a net loss of twenty-three pupils, which contributed, of course, to the decrease from February to March of the total register of all elementary schools. While P. S. 169, Manhattan, thus shows a net loss of twenty-three pupils from February to March, there was an actual net gain, in certain grades, of nineteen pupils.⁴ In short, a given school may show a net gain of one month over another, and yet there may be a net loss in certain grades for the given month; similarly, a given school may

¹ See Report of Intermediate Schools, p. 467.

² The increase, for example, in the total register of all elementary schools, October 31, 1912, over October 31, 1911, was 9,383. Five thousand eight hundred and fifty-five (5,855), or 62 per cent. of this increase, was confined to the forty-two schools and four districts of the Bronx.

³ See for P. S. 169, Manhattan, March and May, Table XVIII. (See insert between pages 570 and 571.

⁴ See Table XVIII.

show a net loss from one month to another, but there may be certain grades which show a net gain. Obviously, the losses in one grade in no way offset the necessity of caring for or aid in caring for the additions in other grades.

Fourth, it should also be borne in mind that the class organization of the school is materially affected by the semi-annual promotions which occur at the end of January and that classes to provide for the instruction of special groups of pupils are formed in increasing numbers as the school year advances.

It therefore follows from the foregoing that in a system of schools like that of the City of New York a net decrease in the total register of all elementary schools from one month to another in no wise necessarily makes possible a corresponding decrease in the number of classes. Indeed, such a net decrease, being as it is the resultant of net losses and net gains, which are unequally distributed among the several schools of the system and which do not occur at the same point, that is, in the same grades, makes necessary an increase rather than a decrease in the number of classes to be organized to provide for the given total register.

4. *Making the Estimates.*—Reference to Table VIII (p. 544) will reveal the fact that the register of December 31st increases year over year. To foretell the register of December 31st a year in advance, for example, the register of December 31, 1912, is, therefore, essentially a question of estimating what the increase of December 31, 1912, will be over December 31, 1911, and adding this estimated increase to the register of December 31, 1911; the total will be the estimated register of December 31, 1912. How is this probable increase for a given year over the preceding year to be estimated?

In any series of variables, such as the foregoing increases in register December over December, mathematically¹ the nearest constant is the arithmetic average of the series as a whole, that is, in the foregoing series of increases in register December over December the increase in register which is most constant throughout the series is the arithmetic average of the several increases. The average annual increase for the series, that is, the arithmetic average, being the nearest constant annual increase, mathematically *the safest* possible estimated increase of December 31, 1912, over December 31, 1911, would therefore be 19,910, the average annual increase in register of December 31st over December 31st for 1902-1911, inclusive. It will be observed, however, that in only three out of the nine years in question was the actual increase in register of December over December as high as 19,910, whereas in the remaining six years out of the nine the increase was less by from 780 to 7,997.

In attempting to estimate the increase in register of December 31, 1912, over December 31, 1911, and on the basis thereof to estimate the

¹ Wright: *The Adjustment of Observations*, pp. 29-34.

Table X—Relative Exactness of Estimates of December and May Registers

Year	Actual Register in Elementary Schools and Kindergartens	Actual Increase of Each Year Over the Preceding Year	Increase or Decrease from Increase of Preceding Year	Estimated Register (+) Above and (—) Below the Actual Register When Estimated Register is Based on					Per Cent. Estimated Register is (+) Above and (—) Below Actual Register, When Estimated Register is Based on				
				Average Annual Increase for Five Preceding Years	Average Annual Increase for Four Preceding Years	Average Annual Increase for Three Preceding Years	Average Annual Increase for Two Preceding Years	Increase of One Year	Average Annual Increase for Five Preceding Years	Average Annual Increase for Four Preceding Years	Average Annual Increase for Three Preceding Years	Average Annual Increase for Two Preceding Years	Increase for One Year
DECEMBER 31													
1902 . . .	477,403												
1903 . . .	514,424	37,021											
1904 . . .	533,518	19,094	—17,927										
1905 . . .	549,144	15,626	— 3,468										
1906 . . .	572,175	23,031	+ 7,405										
1907 . . .	594,011	21,836	— 1,195										
1908 . . .	608,821	14,810	—7,026	+8,512	+5,087	+5,354	+7,624	+7,026	+1.40	+ .84	+ .88	+1.25	+1.15
1909 . . .	627,951	19,130	+ 4,320	250	304	762	807	4,320	— .04	— .05	+ .12	— .13	— .69
1910 . . .	644,685	16,734	— 2,396	+2,153	+2,968	+1,858	+ 236	+2,396	+ .33	+ .46	+ .29	+ .04	+ .37
1911 . . .	656,598	11,913	— 4,821	+7,195	+6,215	+4,978	+6,019	+4,821	+1.10	+ .95	+ .76	+ .92	+ .73
Average per cent. of difference between the estimated register when based on the average annual increase for different periods of years and the actual register . . . . .									.72	.58	.51	.59	.74
MAY 31													
1902 . . .	445,964	29,348											
1903 . . .	475,312	34,657	+ 5,309										
1904 . . .	509,969	15,462	—19,195										
1905 . . .	525,431	18,536	+ 3,074										
1906 . . .	543,967	21,111	+ 2,575										
1907 . . .	565,078	22,387	+ 1,276	+1,436	+ 55	—4,017	—2,563	—1,276	+ .24	+ .01	— .68	— .44	— .22
1908 . . .	587,465	15,679	— 6,708	+6,752	+3,695	+4,999	+6,070	+6,708	+1.12	+ .61	+ .83	+1.01	+1.11
1909 . . .	603,144	17,278	+ 1,599	+1,357	+2,150	+2,448	+1,755	—1,599	+ .22	+ .35	+ .39	+ .28	— .26
1910 . . .	620,422	12,809	— 4,469	+6,189	+6,305	+5,639	+3,670	+4,469	+ .98	+1.00	+ .89	+ .58	+ .71
1911 . . .	633,231	12,865	+ 56	+4,988	+4,173	+2,390	+2,179	— 56	+ .77	+ .65	+ .37	+ .34	— .01
1912 . . .	646,096												
Average per cent. of difference between the estimated register when based on the average annual increase for different periods of years and the actual register . . . . .									.67	.52	.63	.53	.46

register of December 31, 1912, it would mathematically, to be sure, be the safest to take as the increase of December 31, 1912, over December 31, 1911, the actual average annual increase in register December over December for a considerable series of years. But what the length of the series of years should be to yield the most practical estimate, that is, an estimated register relatively near the actual register of the given date, what the length of such a series of years should be can only be determined inductively and as good judgment at the time the given estimate is made would indicate.

Table X shows for December and for the years 1902-1911, inclusive, the actual total register of all elementary schools and the actual increase year over year; it also shows for each of the years 1908, 1909, 1910, and 1911 the amount and the per cent. an estimated register for December would be above or below the actual register should the estimated register for December be based on the actual average annual increase in register for the five preceding years, the four preceding years, three years, two years, or on the actual increase for one year; the table shows, besides, the same facts for May. (See insert between pages 550 and 551.)

From the foregoing it will be observed that it is impossible, as repeatedly stated, to forecast the register as of the end of a given month with absolute exactness, and this is true whether we use as the basis of the estimate the actual average annual increase in register for five years, or four years, or three years, or two years, or the actual increase for one year, or use any other basis that might be suggested. It will, however, be observed that in all the foregoing cases the estimates are relatively exact. The largest deviation in the estimated register as of December 31st from the actual register of that date is 1.40 per cent., the smallest .04 of 1 per cent., while the largest single deviation in the estimated register as of May 31st from the actual register as of that date is 1.12 per cent. and the smallest .01 of 1 per cent.

In estimating the register as of the end of a given month,¹ it is not necessary to arbitrarily assume that the average annual increase for the corresponding month, year over year, for five years, or four years, or three years, or two years, or the actual increase for one year, is the preferable basis to use. Each estimate affords opportunity for discretion and judgment.

For example, in making the forecasts for different budget estimates, if the question was estimating in July, 1910—approximately the time when estimates are made by the Board of Education—the register as of December 31, 1910, and the foregoing data in Table X were at hand up to and including December 31, 1909, the one making the estimate would study the increases in register December over December with care, especially the increases of the last one or two years; he would also take into account the movements month by month in the register

¹ When the proper data are available, an estimate would be made, of course, of the register for the month.

of the schools between January and June, 1910, observing whether or not, when compared with the corresponding months of the preceding year, there was a decided increase or decrease. With these data in hand, the one making the estimate might decide, all things considered, that the average annual increase for the three preceding years would supply the best basis. Reference to the reliability of estimates made in 1908 and 1909 (see Table X) on the average annual increase for the three preceding years might confirm his judgment. If, however, the problem was estimating in July, 1911, the register as of December 31, 1911, all things considered, it might seem best to base the estimate on the average annual increase for the two preceding years. Similarly, in attempting to estimate in July, 1910, the register as of May 31, 1911, the average annual increase for the three preceding years might seem, all in all, to afford the most reliable basis, whereas in attempting to estimate in July, 1911, the register as of May 31, 1912, the average annual increase for the two preceding years might seem preferable.

While estimated registers based on the actual average annual increase for a series of years ranging from one to five *are exact on the average within less than three-quarters of 1 per cent.*, it is impossible to fix on the series of years that will uniformly give the most exact estimate. The best series of years to employ at a given time, in making the estimate for a given month can only be determined by studying the increase in register for the given month, year over year, by studying especially the increases or the decreases in the last one or two years, and by studying the movements in the register of the schools during the months nearest to the month for which the estimate is to be made. When, however, a given series is selected of which the average annual increase in register is to be used as the basis of the estimate, to the end that the estimate may be verified and checked, the series should be indicated and the reasons for using the particular series given. Moreover, that data may be ready at hand to determine the most appropriate series of years to employ, and as a means of checking the reliability of the several series as the basis of making estimates, there should be prepared for each month of the school year tables similar to Table X for December and May, and these tables should be kept up to date.

5. *Checking the Estimates.*—The foregoing method of estimating the total register of all elementary schools as of a given month implies the use of no data other than the past registers of the month in question.

The increase in register of the elementary schools month by month and year over year is affected, of course, by the births and the deaths within the city, by persons coming to the city from other sections of the country, and by immigration. It would seem that a knowledge of these factors, along with definite information about the number of children in the city of school age, would serve, if not as the basis of estimating the register, at least as a reliable means of supplementing and correcting the estimates when made.

The Department of Health of the City of New York collect and publish annually the number of births and the number of deaths in the city as a whole, also the number of deaths by age; under one year, one year up to two, two up to three, three up to four, four up to five, five up to ten, ten up to fifteen, etc.¹ The data of the Department of Health on births and deaths are incomplete.² Even were these data complete, it would be impossible to determine from them the number of children of a given age living at a given time and the number actually living in the city, and, besides, it would be impossible to determine the number of those living and residing in the city who would attend the public school. Hence, however valuable the foregoing vital statistics may be for other purposes, for purposes of estimating the register of all elementary schools at the end of a given month or for purposes of correcting such an estimate when made they are valueless.

Thousands of families doubtless move to the city annually from other sections of the country. But the number of such families, the number and the ages of their children, and the number of these that will attend the public school is unknown. Hence, while the number of children on the register of the elementary schools of the city is unquestionably increased by the incoming of children from other places of the country, nothing sufficiently definite is known to be of use either in estimating or in correcting the register for which budget provisions are requested.

In a city such as the City of New York, composed, as it is, largely of foreigners, it would seem that there would be a direct relation between the increase or the decrease in the register of the elementary schools and the volume of immigration. Table XI shows for the years 1901 to 1911, inclusive, the total immigration into the United States and the per cent. of annual increase or decrease; it shows also the same facts for the total immigration with destination New York State, for the total immigration under fourteen, and for the net enrollment (total number of different pupils on the register of the elementary schools of the city). (See table, page 554.)

It will be observed that it is impossible to correlate the increase or the decrease in the total immigration of a given year with the increase or the decrease in the net enrollment of the elementary schools for the same year or the succeeding year. For example, in 1907 the increase in total immigration over 1906 was 16.77 per cent. and the increase for the corresponding year in the net enrollment of the elementary schools was 2.14 per cent., whereas there was a decrease in total immigration in 1908 from 1907 of 39.09 per cent., but an increase in net enrollment in 1908 of 2.32 per cent. It is equally impossible to correlate the increases and the decreases between total immigration with destination New York State and net enrollment, or between immigration under

¹ Report of the Department of Health for 1909, pp. 274-275.

² Report of the Department of Health for 1908, p. 813, also for 1909.

Table XI—Total Immigration and Net Enrollment for Ten Years

Year	Total Immigration to U. S. for Fiscal Year Ending June 30th	Per Cent. of Increase over or Decrease from Preceding Year	Total Immigration with Destination New York State	Per Cent. of Increase Over or Decrease from Preceding Year	Total Immigration Under 14	Per Cent. of Increase Over or Decrease from Preceding Year	Net Enrollment All Elementary Schools for Year Ending June 30th	Per Cent. of Increase Over or Decrease from Preceding Year
1901.....	487,918		167,241		62,562		540,205	
1902.....	648,743	32.96	203,824	21.87	74,063	18.38	567,153	4.99
1903.....	857,046	32.11	254,665	24.94	102,431	38.30	551,867	2.70
1904.....	812,870	5.15	263,150	3.33	109,150	6.56	594,407	7.71
1905.....	1,026,499	26.28	315,510	19.90	114,668	5.06	625,163	5.17
1906.....	1,100,735	7.23	374,708	18.76	136,273	18.84	648,373	3.71
1907.....	1,285,349	16.77	386,244	3.08	138,344	1.52	662,227	2.14
1908.....	782,870	39.09	256,425	33.61	112,148	18.94	677,615	2.32
1909.....	751,786	3.97	220,865	13.87	88,393	21.18	683,807	.91
1910.....	1,041,570	38.55	280,880	27.17	120,509	36.33	693,246	1.38
1911.....	878,587	15.65	260,278	7.33	117,837	2.22	711,861	2.69
1912.....	838,172	4.60	239,275	8.07				

fourteen and net enrollment. In a word, a large increase in immigration undoubtedly tends to augment the increase in register and a decided decrease in immigration to lessen the increase; but so subtle and so many are the factors acting and reacting on the register of the elementary schools that it is impossible to reduce the relation between register and immigration to such definite terms that a knowledge of the movement in immigration at a given time can be directly used to check or correct a given estimated register.

An important aid in determining the needs of the elementary schools would be an accurate school census showing by months and by school-ages the exact number of children in the city. Up to the present time, however, it has been impossible for the Board of Permanent Census to supply such data.

Although it is impossible to determine with such definiteness as to be useful in estimating a probable register or in checking the estimate when made, the effect on the register of the schools of the natural growth of the city or of families moving in from other parts of the United States or of immigration, what the combined effect of these factors will be, that is, whether or not their combined effect will be such as to bring about a probable normal increase in register or a decided increase or decrease, is indicated more or less clearly for the Spring Term, February-June, in the per cent. of increase of February over February and for the Fall Term, September-January, in the per cent. of increase of September over September.

Table XII shows for each of the years 1902-1911, inclusive, for

each month of the Spring Term, except June, and for each month of the Fall Term, except January, the per cent. of increase in register year over year, and for the Spring Term the amount that the per cent. of increase in register of each month is above or below the per cent. of increase in the preceding February over February, also the same facts for the several months of the Fall Term. (See table, page 556.)

It will be observed that when comparison is made for a given month of the Spring Term, for example, February, between the per cent. of increase in the register year over year, there is a marked difference in these annual increases. The per cent. of increase of February, 1904, over February, 1903, was larger, for example, by .87 of 1 per cent. than the per cent. of increase of February, 1903, over February, 1902. On the other hand, the per cent. of increase of February, 1905, over 1904 was less by 4.35 per cent. than the per cent. of increase of 1904 over 1903. The differences between the per cent. of increase in the same term, March over February, April over February, and May over February, it will be noted, are less than the differences in the per cent. of increase of February over February. This indicates that the factors which affect the register, while they operate differently in different years, operate more or less uniformly throughout the same Spring Term. Consequently, the per cent. of increase in register February over February may be taken as an index of the per cent. of increase year over year for the remaining months of the same Spring Term. For the same reason the per cent. of increase in the register for September over September may be taken as an index of what the per cent. of increase in register will be for the remaining months of the Fall Term.

Moreover, while the factors which operate to increase or decrease the register act differently year over year and act differently in the Spring Term from in the Fall Term, and while the combined effect of these forces is indicated more or less clearly for the Spring Term in the February register and for the Fall Term in the September register, there is no direct break or difference between the action of these factors toward the end of a given Spring Term and the beginning of the following Fall Term. Hence, the per cent. of increase in the register of May over May is within narrow limits an index of the per cent. of increase in the register of the following September over September; and the per cent. of increase in register December over December is within narrow limits an index of the increase in the register of the following February over February. With data at hand such as is given in Table XII it is, therefore, possible to eliminate estimates which would give an increase in the register of a given month which is clearly exceptional or which has little or no basis at all in the past experience of the school.

Table XIII shows the per cent. of increase in the estimated register of September over the actual register of the preceding September for the years 1908, 1909, 1910, 1911, and 1912, when the respective estimates are made on the basis of the average annual increase for the five

Table XII. Comparison by Months of Annual Rate of Increase in Register

Year	(1) Per Cent. of Increase in Register of Feb. 28th (Over Register of Preced- ing Feb. 28th)	(2) Feb. (Over Feb. (+) Cent. of Increase of Dec. Above or (-) Below Per (Over Dec.)	(3) Per Cent. of Increase in Register of Mar. 31st (Over Register of Preced- ing Mar. 31st)	(4) Per Cent. of Increase of Mar. (Over Mar. (+) Above or (-) Below Per (Over Feb.)	(5) Per Cent. of Increase in Register of Apr. 30th (Over Register of Preced- ing Apr. 30th)	(6) Per Cent. of Increase of Apr. over Apr. (+) Above or (-) Below the Per (Over Feb.)	(7) Per Cent. of Increase in Register of May 31st (Over Register of Preced- ing May 31st)	(8) Per Cent. of Increase of May (Over May (+) Above or (-) Below the Per Cent. of Increase of Feb. (Over Feb.)	(9) Per Cent. of Increase in Register of Sept. 30th (Over Register of Preced- ing Sept. 30th)	(10) Per Cent. of Increase of Sept. (Over Sept. (+) Above or (-) Below the Per Cent. of Increase of May (Over May)	(11) Per Cent. of Increase in Register of Oct. 31st (Over Register of Preced- ing Oct. 31st)	(12) Per Cent. of Increase of Oct. (Over Oct. (+) Above or (-) Below the Per Cent. of Increase of Sept. (Over Sept.)	(13) Per Cent. of Increase in Register of Nov. 30th (Over Register of Preced- ing Nov. 30th)	(14) Per Cent. of Increase of Nov. (Over Nov. (+) Above or (-) Below the Per Cent. of Increase of Sept. (Over Sept.)	(15) Per Cent. of Increase in Register of Dec. 31st (Over Register of Preced- ing Dec. 31st)	(16) Per Cent. of Increase of Dec. (Over Dec. (+) Above or (-) Below the Per Cent. of Increase of Sept. (Over Sept.)
1903....	6.73	.....	6.20	-.53	6.38	-.35	6.58	-.15	7.19	+.61	7.21	+.02	7.45	+.26	7.75	+.56
1904....	7.60	-.15	7.14	-.46	7.34	-.26	7.29	-.31	5.10	-2.19	4.45	-.65	3.92	-1.18	3.71	-1.39
1905....	3.25	-.46	3.19	-.06	2.95	-.30	3.03	-.22	2.77	-.26	2.79	+.02	2.86	+.09	2.93	+.16
1906....	3.24	+.31	3.27	+.03	3.65	+.41	3.53	+.29	4.00	+.47	4.06	+.06	4.17	+.17	4.19	+.19
1907....	4.01	-.18	3.96	-.05	3.73	-.28	3.88	-.13	3.32	-.56	3.66	+.36	3.80	+.48	3.82	+.50
1908....	4.00	+.18	4.32	+.32	4.20	+.20	3.96	-.04	3.64	-.32	2.84	-.80	2.72	-.92	2.49	-1.15
1909....	2.35	-.14	2.17	-.18	2.28	-.07	2.67	+.32	2.66	-.01	2.93	+.27	2.96	+.30	3.14	+.48
1910....	2.86	-.28	3.07	+.21	2.77	-.09	2.86	.00	2.17	-.69	2.70	+.53	2.68	+.51	2.66	+.49
1911....	2.43	-.23	2.12	-.31	2.42	-.01	2.06	-.37	1.56	-.50	1.74	+.18	1.60	+.04	1.85	+.29
1912....	1.88	+.03	1.99	+.11	2.10	+.22	2.03	+.15	1.68	-.35	1.43	-.25	.....	.....	.....	.....

preceding years, the four preceding years, three years, two years, and on the basis of the increase for one year; it also shows for each year and for each estimate the amount that the per cent. of increase in the estimated register of September over the actual September register of the preceding year is above or below the per cent. of increase in the actual register of the preceding May over May:

Table XIII—Per Cent. of Increase in Estimated September Register Above or Below Actual September Register, and Above or Below Per Cent. of Increase in Actual Register May Over May

Year	Per Cent. of Increase in Estimated September Register Over Actual September Register of the Preceding Year, When Estimated Register is Based on:					The Amount That the Per Cent. of Increase in the Estimated Register of September Over the Actual September Register of the Preceding Year is (+) Above, or (—) Below the Per Cent. of Increase in Register of the Preceding May Over May, When the September Estimate is Based On:				
	Average Annual Increase in Register for 5 Pre-vious Years	Average Annual Increase in Register for 4 Pre-vious Years	Average Annual Increase in Register for 3 Pre-vious Years	Average Annual Increase in Register for 2 Pre-vious Years	Increase for 1 Year Preceding	Average Annual Increase in Register for 5 Pre-vious Years	Average Annual Increase in Register for 4 Pre-vious Years	Average Annual Increase in Register for 3 Pre-vious Years	Average Annual Increase in Register for 2 Pre-vious Years	Increase in Register for 1 Year Preceding
1908.....	3.92	3.46	3.15	3.47	3.21	— .04	— .50	— .81	— .49	— .75
1909.....	3.37	3.16	3.40	3.30	3.51	+ .70	+ .49	+ .73	+ .63	+ .84
1910.....	2.98	3.13	3.01	3.01	2.59	+ .12	+ .27	+ .15	+ .15	— .27
1911.....	2.88	2.74	2.67	2.33	2.12	+ .82	+ .68	+ .61	+ .27	+ .06
1912.....	2.47	2.36	2.04	1.82	1.54	+ .44	+ .33	+ .01	— .21	— .49

With the data at hand found in column (10), Table XII (p. 556), up to but not including the year for which the given September estimate is to be made, it is clear in making the estimate, for example, for September, 1909, that estimates based on the average annual increase for the five-year period, for the three-year period, for two years and on the increase for one year could be eliminated on the ground that there is no basis in the past increases in register to justify the expectation that the per cent. of increase in the September register over September will be higher than the per cent. of increase in the register of the preceding May over May by .70, .73, .63, or .84 of 1 per cent. Accordingly the estimate would be based on the average increase for the four preceding years, because this estimate would give an increase in register which would conform most nearly to actual increases of the past. Similarly, if the question were estimating the register for Sep-

tember, 1911, estimates based on the average annual increase for five years, four years and three years could at once be eliminated. The problem remaining would be to decide whether or not in view of the increase in the register of September over September for the last few years, it was preferable to use as the basis of the estimate the average annual increase for two years or the actual increase for one year. A study of the actual increase in register of September over September and of the per cent. of increase of September over September (Table IX, p. 549, and Table XII, p. 556) would tend to the conclusion that it was on the whole safer to use the average annual increase for the two preceding years as the basis of the estimate.

In making the estimate for September, it is thus possible for the Board of Education to check the given estimate on the basis of the actual register of the preceding May.

Again, had the Board of Education in attempting to estimate in July, 1911, the register of December, 1911, made an estimate on the basis of the average annual increase of December over December for the five preceding years, the four preceding years, three years, two years and on the basis of the increase for one year, the per cent. of increase in the estimated register of December, 1911, over the actual register of December, 1910, would have been respectively as follows: 2.95 per cent., 2.80 per cent., 2.61 per cent., 2.77 per cent. and 2.58 per cent.¹ The per cent. of increase of these several December estimates above the per cent. of increase of the estimated register of September, 1911, over the actual September register of 1910 would have been as follows: .62, .47, .28, .44 and .25 of 1 per cent. Reference to column (16) of Table XII (p. 583) would make it clear that the estimate based on the five-year period could be eliminated, having no basis in the experience of the schools, and that the choice of the series to be used lay between four years and two years. A study of the actual increase for December year over year, of the per cent. of increase in the December register year over year (Table VIII, p. 544), and of the movements in register from February to May, 1911, would have probably led to the conclusion that the two-year period would supply the preferable base for estimating the register of December, 1911. Such a base would have given an estimated increase of December, 1911, over December, 1910, of 2.77 per cent. against the estimated increase of the Board of Education of 4.12 per cent. As a matter of fact, the actual increase of December, 1911, over December, 1910, was 1.85 per cent. Hence, the Board of Education estimate was 2.27 per cent. too high, whereas the estimates if made and checked as suggested above would have been .92 of 1 per cent. too high.

In the same way it is possible to check the estimate for February against the estimated register for the preceding December and, in turn,

¹ The estimated increase is found by adding to the actual rate of increase (column (15), Table XII, p. 556) the per cent. the estimated increase is above the actual rate of increase (Table X). (See insert between pages 550 and 551.)

to employ the estimated register for February to check the estimates for the following March, April, and May.

6. *Supplementing the Estimate Made in July.*—In checking the relative exactness of the several estimates, when these are made on the basis of the average annual increase for five years, or four years, or three years, or two years, or on the basis of the increase for one year, or whatever the basis employed, it should be noted that, while it is necessary for the Board of Education to make their estimates at least some time prior to the opening of school in September, the estimates submitted are not finally passed on by the Board of Estimate and Apportionment until October 31st. This makes it possible to obtain the actual register for September. Hence, in reviewing the estimates of the Board of Education, it is possible for the Board of Estimate and Apportionment to use the actual register rather than an estimated register for September as the basis of checking the estimates for the following months of the Fall Term. The possession of the actual register of September also makes it possible to check more accurately the estimated register of February, and hence to check more accurately the estimates for the subsequent months of the Spring Term and of the following Fall Term. It is, therefore, probable that there will be a considerable difference between estimates made in July and estimates made after the actual September register is at hand. If such differences are found, it ought not to be held against the Board of Education, providing their estimates are made on the basis of the facts in hand at the given time. In view of the significance of the September register as the basis of checking estimates made in July, much discussion and many misunderstandings, resulting at times doubtless in injury to the schools, could be obviated, if after the register of the elementary schools is known in September the Board of Education would submit to the Board of Estimate and Apportionment supplementary estimates, accompanied by a statement of the changes made possible in their requests by reason of knowing the actual September register.

7. *Estimated Register to Be Viewed as a Whole.*—Finally in making an estimate, for example, for December, the probable increase in register for the given December over the preceding December is fixed on; this estimated increase is added to the actual register of the preceding December and the sum is the estimated total register for the December in question. For this reason, however, it should not be thought that the estimate can be divided into the register as of the preceding December—a fixed and known quantity—and into a particular increase in register—the new element. The actual total register of the December in question, and of which the estimate is a forecast, bears no such direct relation to the elements used in making the forecast. The actual register of the December in question will include many of the pupils on register in the preceding December, but many of the pupils in school then will have dropped out, many new pupils distributed among the

several grades will have entered, and altogether the new and the old will be so blended that, while mathematically it is possible to say there is such and such an increase in the register of December over December, it is practically impossible to separate the new pupils so as to determine the number of new classes to be organized to care for them. In a word, in the administration of the schools classes are not formed for the pupils who were on the register the preceding December and for the pupils on the register for the first time in the December in question separately, but classes are formed according as the number of pupils in given classes makes the organization of new classes necessary. Hence, when the register is estimated for a given month and year the estimated register, representing as it does the probable number of pupils to be instructed, should be viewed as a whole, and budget requests made to care for the estimated register as a whole, rather than that budget requests should be made, as is practically the case now, to care for the old or fixed element of the estimated register and for the estimated increase in register, or the new element.¹

VI. Estimating the Distribution of the Total Estimated Register

1. *The Distributions to Make.*—In order to determine the number of teachers for whom budget provision should be made it is not only necessary to know by months the total estimated register for all elementary schools, but it is necessary to know, besides, the estimated distribution of this estimated register, that is, the estimated register of each of the several grades and kinds of special classes, (a) because the distribution of the actual register differs for the same month from year to year and for different months of the same school year; (b) because the number of pupils instructed per teacher differs with the grade and kind of special class, hence the number of teachers needed varies with the number of pupils in the several grades; (c) because the salaries of teachers vary according to whether they teach in the grades 1A—6B, 7A—8A, 8B, or in special classes, such as classes for mentally defective children,² and (d) because the amount of money needed for supplies varies with the number of pupils in each of the grades and kinds of special classes.³

Table XIV shows for all schools in District 22, Manhattan, for the years 1905-1911, inclusive, the per cent. of the total December register in each grade and kind of special class. (See table, page 561.)

Table XV shows for all elementary schools of the city as a whole for September, 1911, and for May, 1912, the distribution of the register

¹ Estimate of the Board of Education for 1913.

² Document No. 1, 1912, Schedules of Teachers' Salaries.

³ Report on Bureau of Supplies by Mr. Stewart, p. 33.

Table XIV—Per Cent. of December Register in Each Grade

Year	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	C. D. & E.	Kindergarten	Defective
1905.....	9.06	7.14	8.12	8.04	8.16	7.50	7.20	6.67	5.56	4.99	4.95	4.51	4.08	3.89	2.96	3.00	.....	4.16	.....
1906.....	7.15	5.08	8.16	7.26	8.41	7.17	8.53	7.23	6.42	5.31	4.88	4.49	4.08	3.31	3.25	2.90	2.44	3.94	.....
1907.....	7.31	4.65	6.76	6.92	7.49	6.89	7.38	6.90	7.39	6.11	5.20	5.18	4.52	3.73	3.56	2.93	3.01	4.03	.....
1908.....	6.74	5.17	6.29	6.15	7.14	6.43	7.86	7.06	7.09	6.38	5.83	4.39	4.71	3.91	3.70	2.86	4.00	4.11	.14
1909.....	8.52	5.38	6.58	6.33	5.91	6.01	6.68	6.58	7.25	6.54	6.40	5.27	4.95	3.66	4.28	3.23	2.53	3.74	.15
1910.....	7.70	5.44	6.56	5.76	6.50	6.66	6.03	5.79	6.65	6.84	6.48	6.14	5.03	4.71	3.97	3.33	2.64	3.48	.28
1911.....	8.03	5.01	6.46	5.88	6.23	6.32	7.09	6.42	5.61	6.57	6.38	5.65	5.26	4.46	4.01	3.49	2.84	3.93	.36

and the average size of class in the several grades, also the per cent. of the total register in each grade:

Table XV—The Distribution of the September and May Registers and the Size of Class in Different Grades

	8B Grade	7A-8A Grades	1A-6B Grades	C. D. & E. Classes	Kinder- garten	Ungraded Classes	Classes for De- fectives
SEPTEMBER 30TH, 1911							
Register.....	20,094	80,220	496,126	30,538	29,429	1,732	1,093
No. of Classes.....	526	2,032	11,249	930	849	110	66
Average Size of Class.	38.20	39.48	44.10	32.84	34.66	15.75	16.56
Per Cent. of Total Register in Each Grade.	3.05	12.17	75.26	4.63	4.46	.26	.17
MAY 31ST, 1912							
Register.....	21,261	77,599	484,348	28,083	31,175	2,137	1,493
No. of Classes.....	549	2,049	11,334	888	845	133	95
Average Size of Class.	38.73	37.87	42.73	31.62	36.89	16.07	15.72
Per Cent. of Total Register in Each Grade.	3.29	12.01	74.97	4.35	4.82	.33	.23

It will be observed from Table XIV that the distribution of the total register of District 22, Manhattan, is different for each of the years in question. For example, the December 8B register in 1905 was 3 per cent. of the total December register; in 1906, 2.90 per cent.; in 1907, 2.93 per cent.; in 1908, 2.86 per cent.; in 1909, 3.23 per cent.; in 1910, 3.33 per cent., and in 1911, 3.49 per cent.¹ What is true of the distribution of the total register of District 22, Manhattan, is doubtless true of the distribution of the register of the elementary schools of the city as a whole. It will be observed from Table XV that the distribution of the register varies from month to month within the same school year. Of the total September register for all elementary schools in 1911, 3.05 per cent. were in the 8B grade, whereas of the total May register, 1912, 3.29 per cent. were in the 8B grade.

Finally, it will be seen from Table XV that in September, 1911, the number of pupils taught on the average per 8B teacher was 38.20, in May, 1912, 38.73; each kindergartner was instructing on the average in

¹ Similar data for a number of years for the elementary schools of the city as a whole are not available. The register of the grades and kinds of special classes for the months of January and June have been reported for a number of years in the annual reports of the City Superintendent of Schools, but the difference between the total register and in his reports and the total register as reported in the Journal of the Board of Education are so great that we hesitate to use the data for January and June as given in the reports of the City Superintendent of Schools.

September 34.66 pupils, in May 36.89; the average size of C, D, and E classes in September was 32.84, in May 31.62. Similar differences exist from month to month in the number of pupils instructed per teacher in other grades and kinds of special classes.

2. *Estimating the Distribution.*—The total register of all elementary schools for a given month of a particular year is the sum total of the registers in all elementary schools for the given month and year of each of the several grades and kinds of special classes. Any increase or decrease in the total register of all elementary schools for a given month and year over the corresponding month of a preceding year is, therefore, the net result of increase or decrease as compared with the preceding year in the combined registers in all elementary schools of the particular grades and kinds of special classes. In short, the increase or the decrease year over year in the total register of all elementary schools for a series of years is the net result of movements in registers of the respective grades and kinds of special classes. Table XVI shows such movements in the December register for District 22, Manhattan. (See table, page 564.)

To forecast with relative exactness the distribution of a total estimated register for a given month of the budget year it is, therefore, necessary to take into account the movements in the register for the given month in each of the several grades and kinds of special classes. Since the net results of these movements are summarized in the total register for the given month and since the actual average annual increase for a series of years is used as the basis of estimating the total register for the given month, it follows that in attempting to forecast the distribution of the total estimated register among the several grades and kinds of special classes the average annual increase or decrease for the same series of years should be made the basis of estimating the distribution, as was used as the basis of estimating the total register for the given month.

With the average annual increase or decrease in the register of the particular grade or kind of special class in question at hand, the estimate or the distribution is made in the same way as the estimate of the total register for the entire city, namely, this average annual increase or decrease in the register of the particular grade is added to or subtracted from the actual register of the particular grade for the given month of the year preceding the budget year in question; and the sum or the minuend is the estimated register of the particular grade or kind of special class for the given month.

When the average annual increase or decrease for the same series of years is made the basis of estimating the distribution of a total estimated register for a given month, as was used in estimating the total register, then the sum total of the estimated register or estimated distribution among the several grades and kinds of special classes will always equal the total estimated register for the given month. This

Table XVI—Increases and Decreases from Year to Year in the December Register of the Several Grades

Year	Total Register	REGISTER														Kinder- garten	C. D. & E. Classes	Defec- tive
		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	
1905.....	9,022	817	644	733	725	736	677	650	602	502	450	447	407	368	351	267	271	375
1906.....	10,475	749	532	855	760	881	751	893	757	673	556	511	470	427	347	340	304	256
1907.....	11,249	822	523	760	778	842	775	830	776	831	687	585	583	509	420	400	330	339
1908.....	12,297	829	636	774	756	878	791	967	868	872	784	717	540	583	481	455	352	492
1909.....	12,280	1,047	661	809	778	725	738	821	809	891	804	787	648	608	450	526	397	311
1910.....	12,857	990	699	844	740	836	856	775	744	855	880	833	790	647	606	511	428	340
1911.....	13,426	1,078	673	867	789	837	849	932	862	753	882	856	759	706	599	538	469	381

is mathematically true; hence, no data need be supplied in support thereof.

There are no data at hand which make it possible to test for the entire city the reliability of the estimated distribution when made as suggested above. This fact is, however, clear, that an estimate of the number of teachers needed which is based on an estimated distribution of the total register among the several grades and kinds of special classes, even if the estimated distribution is only approximately exact, will, as a rule, be a more just and liberal estimate, hence will yield a more liberal allowance of money for the elementary school, than an estimate of the teachers needed which is based on the total estimated register as a whole. To be sure, it is a simple matter to divide the total register, for example, as of May 31, 1912, by the number of classes as of that date and find the average size of all classes, irrespective of grade. The total estimated register, for example, as of May 31, 1913, may then be divided by this average size of class to find the total number of classes, hence the total number of teachers needed to care for the given total estimated register. Such an allowance of teachers rests, however, on the assumption that the given number of teachers will be adequate, *providing the distribution of the register among the several grades and kinds of special classes remains the same*. But, as we have seen in Tables XIV, XV, and XVI, the distribution does not remain the same. Besides, we also know that by reason of the great increase in the rate of promotion within the last few years¹ pupils in larger numbers are being advanced to the upper grades (Table XIV), and in these upper grades more teachers are required, as the schools are conducted in New York, to instruct a given number of pupils than to instruct the same number of pupils in the lower grades (Table XV); moreover, the number of special classes is being rapidly multiplied, and the number of pupils in these special classes instructed per teacher is considerably less than the number instructed per teacher in the regular classes (Table XV).² In consequence, an estimate of the number of teachers needed which takes into consideration the changes in the distribution of the register from year to year will, as a rule, be a more just and a more liberal estimate than an estimate which rests on an assumption which is known to be untrue.

3. *Supplementing the Estimated Distribution.*—The policies of the Board of Education are well defined with respect to the classes in the regular grades, that is, the grades 1A-8B; they are also now relatively well fixed with respect to C, D, and E classes; hence, the changes from year to year in the register of the regular grades and of C, D, and E classes are not so very rapid. In the case of special classes, however, such, for example, as classes for the blind, the deaf, crippled children,

¹ See Report, Promotion, Non-Promotion and Part-Time.

² There were for example in September, 1911, 176, and in May, 1912, 228 classes for the instruction of physically and mentally defective children, from special reports by the City Superintendent of Schools to the Committee on School Inquiry.

and mentally defective children, there may be radical changes, the number of pupils in such classes depending from year to year on the particular policy of the Board of Education prevailing at the given time. While the estimated register of these special classes, if made as suggested above, would provide for a normal development in the register of such classes, this increase in the opinion of the Board of Education might not be sufficient to enable them to carry out their plans with respect to a given group of children, for example, the mentally defective. Under such conditions the particular estimated register might, as is now practically the case, be supplemented by the Board of Education, the only limitation being that in each instance the extent to which a given estimate is to be supplemented should be indicated and the reasons therefor be given.

4. *Data Needed as Basis of Distribution.*—In the distribution by grades and kinds of special classes of a total estimated register for a given month, that is, in estimating for the given month the register of each of the grades and kinds of special classes, the method suggested is the same as that suggested for estimating the total register, but the data required to make the two estimates are different. To estimate the register of each of the several grades and kinds of special classes, we need to know the register of each grade and kind of special class by months for a series of past years. While there is no recorded experience to serve as a basis of judgment, it would seem adequate for present purposes to tabulate by months such data for the last three years. If the foregoing plan of estimating the need of teachers should be adopted, such data would, of course, hereafter be tabulated currently.¹

VII. Determining the Numbers of Pupils For Whom One Teacher Should Be Provided

In making a budget estimate for the elementary schools it is not only necessary to know the estimated total register and the estimated distribution thereof among the several grades and kinds of special classes, but it is also necessary to know, for each grade and each kind of special class, the number of pupils for whom one teacher should be provided.

1. *Factors Influencing the Number of Pupils Actually Instructed per Teacher.*—It might seem possible to determine for each grade and kind of special class, on theoretical grounds, the number of pupils for whom one teacher should be provided. Having so determined the number of pupils for whom one teacher should be provided, it would be a simple task, in view of a given estimated total register and a given estimated distribution, to determine the number of teachers needed to care

¹We are aware that the present register, as well as the register of past years includes pupils who are not included in the register we are proposing to be used in estimating the needs of the school. However desirable it might be, it is impossible, at least for some time, to escape using the present register in making the estimates for which budget provisions are requested.

for the estimated register of each grade and kind of special class. There are, however, reasons why it is impossible in a city such as the City of New York to determine for each grade and kind of special class, on theoretical grounds, the number of pupils for whom one teacher should be provided.

(a) Children are not like pegs so that they may be stuck around wherever there happens to be a hole, or like blocks of wood so that the same number may be put in boxes of like size. Children must be taught, as a rule, in the school where they are. In consequence, the number of pupils in a given school and grade may be such as to make it necessary to have a small or a "short" class; similarly, the number may not be large enough to form two classes, but very large for one class, making necessary a large or a "long" class. The particular number of pupils there happens to be in each grade and kind of special class of each of the several schools of the system is, therefore, a material factor in determining the actual number of pupils instructed per teacher.¹

(b) The classrooms in the new school buildings are, as a rule, standardized, that is, they will accommodate uniformly from 40 to 45 pupils. In the older school buildings the size of classrooms varies materially; there are classrooms with twenty-five sittings and classrooms with as high as seventy sittings; in some old buildings the classrooms are uniformly small, and in other old buildings they are uniformly large. The demand for classrooms makes it necessary, at least in certain buildings, to use every classroom, whether large or small, and there is need, at least at times in certain buildings, to use all the sittings in each room. The difference in the size of classrooms in the several elementary school buildings of the city is, therefore, a material factor in determining the number of pupils actually instructed per teacher.

Table XVII shows for certain schools the differences in the number of seats in certain rooms of the same building and the differences in the number of seats in rooms used for the same grade of pupils in different buildings. (See table, page 568.)

(c) The elementary schools of the City of New York vary in size. There are schools, such as P. S. 10, Queens, with one classroom, and there are schools, such as P. S. 188, Manhattan, with 94 classrooms. In a small school, having but one or two classes in each grade, little can be done, as a rule, to make the classes in the different grades uniform in size. In consequence, in the same school, one teacher may be teaching only thirty pupils, whereas another teacher may be instructing fifty or even sixty and more.² In contrast, the large school, having from

¹ As an illustration of the differences in the size of classes in the same grade of different schools and of the differences in the size of classes in the different grades of the same school, compare the register and number of classes, grade for grade, in P. S. 186, Manhattan, as of September 30, 1911, Table IV, p. 534, with the register and number of classes in P. S. 169, Manhattan, as of the same date, Table XVIII. (See insert between pages 570 and 571.)

² In P. S. 32, Manhattan, the register of a certain 8A class as of November 30, 1912, was 30, whereas the register of a certain 6A class was 62.

Table XVII—Differences in Seating Capacity of Different Rooms

Grade for Which Used	NUMBER OF SEATS IN GIVEN ROOMS				
	P. S. 52 Manhattan	P. S. 6 Manhattan	P. S. 32 Manhattan	P. S. 45 Manhattan	P. S. 35 Brooklyn
8B.....	40	32	46	27	40
8A.....		43	40	34	37
7B.....		55	44	32	35
7A.....	35	54	52	46	38
6B.....		54	46	46	42
6A.....		61	40	31	48
5B.....	40	43	52	36	47
5A.....		55	47	39	33
4B.....		54	58	42	33
4A.....	38	54	52	49	47
3B.....	38	52	32	40	54
3A.....	28	59	54	36	38
2B.....	40	60	46	46	58
2A.....		55	54	55	60
1B.....		55	39	48	60
1A.....	37	61	56	55	62

three to six and more classes in the same grade, affords large opportunity to keep the several classes relatively uniform. If there are three small classes, having an actual register of 74 pupils, these three classes can be consolidated into two classes, each having a register of 37. Similarly, if there are three classes, having together a register of 160 pupils, a fourth class can be formed, each class having a register of forty pupils. The varying size of elementary school buildings is, therefore, a material factor in determining the number of pupils actually instructed per teacher.

(d) There have developed in the day elementary schools of the city two kinds of regular classes, full-time classes and part-time classes. Part-time extends at the present time in some schools through the 6B grade, for example, P. S. 40, The Bronx. School authorities not only regard part-time as undesirable, but regard part-time as increasingly serious as it advances from the 1A to the higher grades. Consequently, in schools where there is no part-time and there are available rooms greater freedom is allowed principals with respect to the division of large classes than is allowed in schools having part-time in the first-year grades, the 1A and the 1B, and even greater freedom is allowed in schools having part-time in the first-year grades only than in schools where part-time extends above the first-year grades. The presence of part-time is, therefore, a material factor in determining the number of pupils actually instructed per teacher.

(e) The opinions of principals differ with respect to what the size of a class should be in order to achieve the best educational results, and

even the opinion of the same principal will vary somewhat with the particular pupils and teacher in question. Accordingly, where conditions permit, one principal organizes his or her school with from 30 to 35 pupils per class, whereas another principal in a neighboring school organizes his or her school with from 35 to 40 pupils per class. The personal opinions of principals with respect to proper size of class are, therefore, a material factor in determining the number of pupils actually instructed per teacher.

(f) The public school cannot fix on the number of pupils it will undertake to instruct and refuse to admit pupils in excess of this number. The public school must care in some way or other for all pupils of legal school age who desire to attend. In consequence, if the budget allowance for the support of the schools is small, it may happen that classes will need to be made large, whereas if the budget allowance is liberal it may be that classes will be reduced in size. The given budget allowance may, therefore, be a material factor in determining the number of pupils actually instructed per teacher.

For the foregoing reasons it is, therefore, impractical to attempt to determine on theoretical grounds the number of pupils on the average for whom one teacher should be provided, and, even if the number were theoretically determined, it would doubtless be found that the number actually instructed per teacher would differ materially from the theoretical number fixed on.

2. *Determining the Number of Pupils for Whom One Teacher Should Be Provided.*—For budget purposes it is not, in the last analysis, a question of the number of teachers *in service* to care for a given register and distribution of pupils, but a question of the number that *should have been in service* and that *could have been used* under existing conditions to care for the given register. The only practical way of determining the number of pupils on the average for whom one teacher should be provided is, we believe, to determine for each elementary school of the system the number of teachers by grades and kinds of special classes that were needed and that could have been used, month by month, to care for the given total register and the given distribution of pupils.

Thus, to determine by grades and kinds of special classes the number of pupils on the average for whom one teacher should be provided involves:

(a) A study by months of the conditions in each elementary school of the system, that is, a study of the capacity of the several classrooms, of whether or not there are available rooms in addition to those in use, of whether or not there is part-time, and in what grades there is part-time, if any, etc. For, as we have seen, the actual size of class, hence the number of pupils instructed per teacher, is conditioned by these and other factors.

(b) There is also involved, in determining the number of pupils

on the average for whom one teacher should be provided, definite knowledge, by months and by grades and kinds of special classes, of the number of classes and the size of each class in each elementary school, to the end that, in view of the existing conditions and in view of the standard size of class, as fixed by the Board of Education, and of their regulations with respect to combining small classes and with respect to dividing large classes, the actual number of teachers needed and that could be used to care for the given register and given distribution of pupils in each grade and kind of special class may be determined. In some schools and in certain grades and kinds of special classes it may be found, for example, that the number of teachers in service to care for the given register and distribution of pupils is excessive, whereas in other schools it may be found that the number of teachers in service is not sufficient to care for the given register, even though the conditions are such as to make possible the use of additional teachers.

Table XVIII shows by grades and kinds of special classes for P. S. 169, Manhattan, the register and the increase or decrease month to month, also the number of classes and increase or decrease month to month, for each of the months, with the exception of January and June, for the school year 1910-1911. (See insert between pages 570 and 571.)

It will be observed that the total register of a school is not static, that is, remains the same from month to month throughout the school year, nor is the distribution of a total register static; the particular register of each of the several grades and kinds of special classes changes from month to month. It will also be noted that the total register of a school at the end of each month is the resultant of both increases and decreases in the register of particular grades. In a month, for example, such as October, in which there was a slight increase in P. S. 169 in total register over September, there was a decrease in the register of a number of grades; similarly in a month such as November, in which there was a decrease in total register from October, the register of a number of grades increased. At times the size of the classes in the several grades is such that a slight decrease or increase in the register of the given grade in no wise affects the number of teachers needed, for example, the changes from November 30th to December 31st; at other times, however, any considerable increase or decrease in the register of given grades does affect the number of teachers required, for example, the changes from March 31st to April 30th.

What is true of P. S. 169 with respect to changes in the register from month to month in the several grades and kinds of special classes and with respect to the changes from month to month in the teachers actually needed is true, within limits, of each elementary school of the system. In consequence, it is not sufficient for budget purposes to determine by grades and kinds of special classes for one month of the school year the number of pupils on the average under existing conditions one

Table XVIII—Changes by Grades in P. S. 169 from Month to Month in the Register and Number of Classes

P. S. 169, MAN.	SEPTEMBER 30		OCTOBER 31		NOVEMBER 30		DECEMBER 31		FEBRUARY 28		MARCH 31		APRIL 30		MAY 31											
Grades	Register	No. of Classes	Register	Increase Over (+) or Decrease from (—) Register of Preceding Month	No. of Classes	Register	Increase Over (+) or Decrease from (—) Register of Preceding Month	No. of Classes	Register	Increase Over (+) or Decrease from (—) Register of Preceding Month	No. of Classes	Register	Increase Over (+) or Decrease from (—) Register of Preceding Month	No. of Classes	Register	Increase Over (+) or Decrease from (—) Register of Preceding Month	No. of Classes									
8B.....	68	2	65	— 3	0	64	— 1	2	64	0	2	68	+ 4	2	70	+ 2	2	66	— 1	2	0					
8A.....	80	2	78	— 2	0	72	— 6	2	75	— 3	2	101	+26	2	100	— 1	2	92	— 5	2	0					
7B.....	111	3	107	— 4	3	108	+ 1	3	109	+ 1	3	95	—14	2	95	0	2	88	— 7	2	0					
7A.....	134	3	127	— 7	3	91	—36	2	95	+ 4	2	94	— 1	2	93	— 1	2	87	— 6	2	0					
6B.....	102	3	107	+ 5	3	94	—13	2	94	0	2	107	+13	2	106	— 1	2	108	+ 2	2	0					
6A.....	99	2	94	— 5	2	94	0	2	96	+ 2	2	102	+ 6	2	109	+ 7	2	112	+ 3	3	+1					
5B.....	98	2	97	— 1	2	102	+ 5	2	102	0	2	107	+ 5	2	101	— 6	2	101	0	2	0					
5A.....	95	2	93	— 2	2	95	+ 2	2	97	+ 2	2	98	+ 1	2	92	— 6	2	90	— 2	2	0					
4B.....	132	3	126	— 6	3	94	—32	2	97	+ 3	2	114	+17	2	110	— 4	3	108	— 2	3	0					
4A.....	139	3	139	0	3	101	—38	2	107	+ 6	2	126	+19	3	126	0	3	123	— 3	3	0					
3B.....	127	3	128	+ 1	3	126	— 2	3	128	+ 2	3	127	— 1	3	122	— 5	3	124	+ 2	3	0					
3A.....	128	3	131	+ 3	3	131	0	3	130	— 1	3	131	+ 1	3	133	+ 2	3	134	+ 1	3	0					
2B.....	119	3	122	+ 3	3	122	0	3	124	+ 2	3	133	+ 9	3	127	— 6	3	127	0	3	0					
2A.....	136	3	139	+ 3	3	142	+ 3	3	141	— 1	3	131	+10	3	122	— 9	3	121	— 1	3	0					
1B.....	122	3	122	0	3	123	+ 1	3	130	+ 7	3	164	+34	3	161	— 3	3	165	+ 4	3	0					
1A.....	145	2	162	+17	3	170	+ 8	3	173	+ 3	3	93	—80	2	97	+ 4	2	103	+ 6	2	0					
Kg.....	72	2	82	+10	2	83	+ 1	2	86	+ 3	2	76	—10	2	79	+ 3	2	82	+ 3	2	0					
D.....	33	1	27	— 6	1	26	— 1	1	26	+ 3	1	29	0	1	30	+ 1	1	29	— 1	1	0					
Total.....	1,940	45	1,946	+ 6	46	1,838	—108	42	1,877	+39	42	1,896	+19	41	1,873	—23	42	+1	1,873	0	43	+1	1,782	—91	43	0

teacher can instruct, but this must be done each month of the school year, with the possible exceptions of January and June.

With the register by months and by grades and kinds of special classes of each elementary school of the system in hand, also the number of teachers by months and by grades and kinds of special classes, it is easy to combine, on the one hand, by months and by grades and kinds of special classes, the register of the several elementary schools, and to combine, on the other hand, by months and by grades and kinds of special classes, the number of teachers that were in service and could have been used under existing conditions in all elementary schools. From these data it is an easy task to determine by months and by grades and kinds of special classes the number of pupils on the average, under existing conditions, one teacher can economically and efficiently instruct, hence to determine the number of pupils by months and by grades and kinds of special classes for whom on the average, under existing conditions, one teacher should be provided.

The use of such a number as the divisor to determine the number of teachers for whom, in view of a given estimated register, budget provisions should be made rests, of course, on the assumption that the foregoing factors (see pp. 567-69) which affect the number of pupils one teacher actually instructs change little from year to year. There is nothing, however, in this assumption to be feared. There is no reason to suppose that the distribution of pupils will be such that it will be necessary, taking the city as a whole, to organize relatively more "short" classes or more "long" classes one year than another. Nor is there any reason to suppose that there will be such changes in a single year in the size of classrooms, the size of buildings, in part-time, etc., as to affect materially the number of pupils one teacher can instruct. While we admit the foregoing assumption, we nevertheless believe that, to determine the number of teachers for whom budget provisions should be made on the basis of the number of pupils in the preceding year experience shows one teacher, under existing conditions, can economically and efficiently instruct, is a practical method of procedure.

3. *Regulations Needed on Size of Class.*—The regulations of the Board of Education on the size of class read as follows: "In no kindergarten class shall the register (number of children) exceed fifty, except as in this section otherwise provided; and in no class in elementary schools shall the number on roll exceed fifty without the permission of the Board of Superintendents."¹

These regulations should be expanded and made more definite in order to afford the proper guidance to principals, to district superintendents, and to associate superintendents. It is also essential that this be done, if the foregoing plan of determining, by months and by grades and kinds of special classes, the number of pupils for whom on the average one teacher should be provided is to be adopted; otherwise there

¹ By-Laws of the Board of Education, Section 45, Subdivision 7, p. 59.

might be a disagreement between fiscal and educational authorities on the number of teachers there should be in a given school at a given time to care for a given register. To the end that school officials may have the proper guidance, that there may be uniformity in administration, with respect to the size of class, in so far as this is possible with the varying conditions in the different schools, and that there may be at hand the basis of carrying the foregoing plan into effect, we recommend that the Board of Education be requested to formulate regulations with respect to:

(a) The standard size of class in all elementary schools in each grade and kind of special class, such standards to be followed wherever conditions will permit.

(b) The combination of small classes—the maximum size after combination, in schools having no part-time: (1) in schools having less than three classes in the same grade, and (2) in schools having three or more classes in the same grade.

(c) The division of large classes—minimum size after division, in schools having no part-time and available rooms: (1) in schools having less than three classes in the same grade, and (2) in schools having three or more classes in the same grade.

(d) The combination of small classes—the maximum size after combination, in schools having part-time: (1) in schools having less than three classes in the same grade and having part-time in the first year grades only, in the first and second year grades only, in the first, second, and third year grades only, and in the first, second, third, and fourth year grades only; and (2) in schools having three or more classes in the same grade and having part-time in the first year grades only, in the first and second year grades only, in the first, second, and third year grades only, and in the first, second, third and fourth year grades only.

(e) The division of large classes—minimum size after division, in schools having part-time: (1) in schools having less than three classes in the same grade and having part-time in the first year grades only, the first and second year grades only, in the first, second, and third year grades only, and in the first, second, third, and fourth year grades only; and (2) in schools having three or more classes in the same grade and having part-time in the first year grades only, in the first and second year grades only, in the first, second, and third year grades only, and in the first, second, third, and fourth year grades only.

(f) The period beyond which small classes should not be combined: (1) in schools having no part-time, and (2) in schools having part-time.

(g) The period beyond which large classes should not be divided: (1) in schools having no part-time and available rooms, and (2) in schools having part-time.

With such regulations in hand, it would be possible to determine, month by month, for each elementary school in the system, the number of teachers there should have been in a given school to care for the given

register; also, should there be less teachers or should there be more teachers in the given school than the number prescribed by the regulations governing the size of class, the consolidation of small classes and the division of large classes, the reasons for the deviation from the regulations could be noted and made a matter of record.

4. *Data Needed to Carry Out Method Proposed.*—The proposed method of determining the number of pupils on the average for whom one teacher should be provided requires a study, month by month, of certain physical conditions, such as available rooms, etc., in each of the elementary schools of the system. The data implied in such a study are now supplied by the monthly report made by the principal of each school and sent to the office of the City Superintendent of Schools, hence are at hand and could be used should the foregoing method be adopted.

The monthly report made by the principal of each school and sent to the office of the City Superintendent of Schools shows also the number of pupils on the register of each class at the end of the month. These data are valuable, but for the administrative and budgetary control they are not conveniently arranged. It is impossible to determine from them at a glance the small classes in a given grade which might probably have been combined, or the large classes in a given grade which might probably have been divided, and there is no place to record the reason why given small classes were not consolidated or why given large classes were not divided.

To facilitate the work of administration in so far as this has to do with class organization and to supply, month by month, the needed budgetary data on the classes of each elementary school of the system, we would recommend the adoption of the following blank. (See insert between pages 574 and 575.)

The blank, as drawn, is for use in organizing the data to be collected month by month from each elementary school. Column "a" designates the grade and kind of special class; column "b" calls for the *register for the month*¹ of all classes of the same grade or kind of special class; column "c" for the number of classes at the end of the month in each grade and kind of special class; columns "d," "e," "f," "g," "h," and "i" call for the *register for the month* and the number of classes of the several sizes less than 30, 30 and less than 35, 35 and less than 45, etc. Column "j" calls for the specific reason why certain small classes of a given grade or kind of special class were not consolidated and the specific reason why certain large classes were not divided; column "k" supplies space to indicate, after due investigation, the number of classes that should have been formed under existing conditions to care economically and efficiently for the given register for the month.

With the data called for in the foregoing blank in hand soon after the end of each school month for each elementary school of the system, the official having in charge the organization of classes would be able

¹ See definition, pp. 528 and 529.

to determine at a glance for each school whether or not it was necessary to institute inquiry why certain small classes had not been consolidated and why certain large classes had not been divided. On the other hand, the fiscal authorities would have ready to hand, month by month, the means of determining the number of teachers actually needed and that could have been used under existing conditions to care for the given register. In a word, the fiscal authorities would have ready to hand the data necessary to verify, month by month, the actual need of teachers in each elementary school of the system.

For purposes of administration and for purposes of information, it would be well to have the data collected for each school with respect to the number and the register of the classes of each size tabulated for the city as a whole. For purely budgetary purposes, however, it would only be necessary to tabulate, month by month, and by grades and kinds of special classes, the register, the number of classes that were organized, and the number of classes that should have been formed under existing conditions to care for the given register economically and efficiently.

The data called for in the foregoing blank might be made the subject of a separate monthly report, to be filled out by the principal of each school and sent to the office of the City Superintendent of Schools. It would, however, be preferable to include in the present monthly report of the principal, as suggested above, the *register for the month* of each class, and then to have all the work of collecting the data for each school, called for in the foregoing blank, done at the office of the City Superintendent of Schools. To collect the requested data from the several monthly reports, to make the proper entries at the end of the month why certain small classes had not been combined, and why certain large classes had not been divided, and to tabulate, month by month, and by grades and kinds of special classes for the city as a whole, the register and the number of classes that should have been organized, aside from thereby giving the associate superintendent having charge of the organization of classes much needed assistance, there would be required not to exceed two competent clerks.¹

With the tabulation by months and by grades and kinds of special classes of the register for the month of all elementary schools and of the number of classes there should have been to care under existing conditions for the given register, it is an easy task to determine by months and by grades and kinds of special classes the number of pupils for whom on the average one teacher should be provided. There is involved merely the division of the given register for the month; for example, the 8B by the number of 8B classes there should have been to care for the given 8B register, the quotient is the number of 8B pupils for whom on the average one 8B teacher should be provided. Similarly for all

¹ This estimate is based on the time required to collect and tabulate similar data for all the schools of Dist. 22, Manhattan.

PUBLIC SCHOOLS OF THE CITY OF NEW YORK

Day Elementary Schools

Report on Distribution of Register For the Month by Grades, Number, and Size of Classes,
for Month Ending

191

Number of Classes on Part-Time
at End of Month.....
Highest Grade of Part-Time Class.....

Total Number of Classrooms.....
(Exclusive of Shops and Kitchens)

P. S. NUMBER

BOROUGH OF

DISTRICT

NUMBER OF CLASSES AND REGISTER FOR THE MONTH OF ALL CLASSES HAVING																
a Regular Grades	b Register for Month	c Number of Classes on Last Day of Month Before Promotion	d Less than 30		e 30 and Less than 35		f 35 and Less than 45		g 45 and Less than 50		h 50 and Less than 55		i 55 or more		j Reason for Not Combining Small Classes and Not Dividing Large Classes	k Number of Classes that Should Have Been Formed
			1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes		
8B.....
8A.....
7B.....
7A.....
6B.....
6A.....
5B.....
5A.....
4B.....
4A.....
3B.....
3A.....
2B.....
2A.....
1B.....
1A.....
Total.....
Kindergarten
a C, D, and E Classes	b Register for Month	c Number of Classes on Last Day of Month Before Promotion	d Less than 20		e 20 and Less than 25		f 25 and Less than 30		g 30 and Less than 35		h 35 and Less than 40		i 40 or more		j Reason for Not Combining Small Classes and Not Dividing Large Classes	k Number of Classes that Should Have Been Formed
			1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes		
C Classes.....
D Classes.....
E Classes.....
Total.....
a Classes for Defectives	b Register for Month	c Number of Classes on Last Day of Month Before Promotion	d Less than 10		e 10 and Less than 15		f 15 and Less than 20		g 20 and Less than 25		h 25 and Less than 30		i 30 or more		j Reason for Not Combining Small Classes and Not Dividing Large Classes	k Number of Classes that Should Have Been Formed
			1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes	1 Total Register for Month	2 Number of Classes		
Blind.....
Deaf.....
Ungraded.....
Anemic.....
Tubercular.....
Crippled.....
Total.....

a. Register for Month includes all pupils on the register, exclusive of transfers, who have been in school at least one entire day during the given Month.

b. Register for Month (Column b) = the sum of 1 of d, e, f, g, h, and i.

c. Number of Classes on Last Day of Month (Column c) = the sum of 2 of d, e, f, g, h, and i.

other grades and kinds of special classes for the several months of the school year.

VIII. Estimating the Total Number of Teachers Needed

With the estimated register by months and by grades and kinds of special classes, estimated as suggested in V and VI of this report, in hand, and with the number of pupils by months and by grades and kinds of special classes one teacher can instruct, determined as suggested in VII of this report, in hand, it is merely a problem in division to estimate by months and by grades and kinds of special classes the number of classes that should be formed, and hence the number of teachers for whom budget provisions should be requested. The estimated register of a given grade for the month in question is divided by the number of pupils of the given grade which experience of the corresponding month of the preceding year shows one teacher, under existing conditions, can economically and efficiently instruct. The number of classes required to care for the estimated register of each of the grades and kinds of special classes is the estimated total number of teachers needed in all elementary schools of the system for the month in question.

For convenience, by reason of the salary schedules, after the separate estimates have been made and recorded, the teachers needed may well be grouped according as they will teach in the 8B, 7A-8A, 1A-6B, kindergarten, or in one or the other of the several kinds of special classes.

IX. Estimating the Number of New Teachers Needed

With the estimate by months and by grades and kinds of special classes of the number of teachers needed in hand, to estimate the number of new teachers of each of the several kinds to be employed in each month of the budget year in question, we need to know the number of each kind of teacher in service, including vacancies as of December 31st, that is, the number teaching 8B classes, 7A-8A classes, 1A-6B classes, kindergarten classes, ungraded classes, etc. As the budget estimate is now made, to ascertain the number of teachers of each kind in service, including vacancies as of December 31st, it is necessary to know the number of teachers in service as of May 31st prior to the given budget year, also the number of vacancies in each grade and kind of special class existing as of May 31st, and the number of teachers of each kind that will be appointed each month between May 31st and December 31st.

With the estimate of the number of teachers of each of the several kinds needed in a given month of the budget year, for example, January, together with the knowledge of the number of teachers of each kind in service, including vacancies December 31st, in hand, the number of new teachers of each kind to be appointed ¹ in January is found by subtract-

¹ See Budget Estimate of Board of Education for 1913, Schedules No. 2, No. 66, No. 67, and No. 68.

ing the number of each kind of teacher in service, including vacancies December 31st, from the number of the corresponding kind needed in January. Similarly, with the number of teachers of each kind in service, including vacancies, January 31st, together with knowledge of the number of each kind needed in February in hand, the number of each kind to be appointed in February is found by subtracting the number of each kind in service, including vacancies, January 31st, from the number of the corresponding kind needed in February, and so on for each of the several months of the budget year in question.

To carry the foregoing method of determining the number of new teachers to be appointed into effect it will be necessary to make certain changes in the budget estimate as now submitted. In the budget estimate as now submitted the elementary teachers as of May 31st and the vacancies existing as of that date are classified practically according to salary schedules only, and the same is true of the teachers to be appointed during the given budget year.¹ If the foregoing method of determining the number of new teachers to be added is adopted, it will be necessary hereafter in the budget estimate to classify the teachers in service May 31st and the vacancies existing as of that date, and all teachers to be appointed monthly thereafter both according to kind of class to be taught, 8B class, 1A class, kindergarten, ungraded class, etc., and according to salary schedule.

For convenience, by reason of the salary schedules, after the number of each kind of new teacher is estimated and recorded, the new teachers needed may well be grouped according as they will teach in the 8B, 7A-8A, 1A-6B, kindergarten, or in one or the other of the several kinds of special classes.

X. Determining the Length of Service

The total number of classes increases almost invariably, as we have seen (Table IX, p. 546), from month to month during the budget year. It is therefore necessary to provide salaries in a given budget to care for the entire number of classes as of December 31st, hence to provide in the given budget salaries for an entire year for all teachers in service, including vacancies as of December 31st. In addition to providing for the entire year for all classes as of December 31st, it is necessary to provide also for the entire year for the increase in classes of January over December, to provide, besides, for eleven months for the increase in classes of February over January, for ten months for the increase in classes of March over February, and so on for the remaining months of the given budget year.

For convenience, by reason of the salary schedules, when the length of service of each kind of new teacher is fixed and record made thereof,

¹ See Budget Estimate of the Board of Education for 1913, Schedules No. 2, 66, 67, and 68.

the number of new teachers to be added may well be grouped according as they will teach in the 8B, 7A-8A, 1A-6B, kindergarten, or in one or the other of the several kinds of special classes, and the average length of service of the new teachers in each group determined.

XI. Conclusions and Recommendations

In discussing the question, Estimating for Budget Purposes the Number of Teachers Needed in the Elementary Schools, it has not only seemed necessary but wise to take into account certain proposals made by persons in authority, such, for example, as the use of average daily attendance as the basis of estimating the need of the schools. Considerations of this character have added much to the length and to the complexity of this report. But the length and the complexity of the report should not be confused with the simplicity of the plan presented.

The main features of the proposed method of estimating the need of elementary school teachers for budget purposes, the adoption of which we recommend, are:

1. That a register including only pupils, exclusive of transfers, who have been in attendance at least one entire day during the month be made the basis of estimating the needs of the elementary schools.

2. That the entire elementary school system be made the unit in estimating the register.

3. That the estimate of the register for the entire system as a whole be based on the actual average annual increase or decrease in the register of all elementary schools for a series of past years, and that a separate estimate be made for each month of the school year.

4. That the estimated register for the system as a whole for a given month be distributed among the several grades and kinds of special classes on the basis of the average annual increase or decrease in the grades in question for the same series of past years as were employed in estimating the given total register for the entire system.

5. That the number of pupils for whom on the average one teacher is to be provided be determined, by months and by grades and kinds of special classes, from a study of the conditions in each elementary school and from the number of pupils it is found one teacher, under existing conditions, can economically and efficiently instruct.

The entire system is thus made the unit in estimating the total register for which budget provisions are to be requested, whereas the individual school is made the unit in determining the number of pupils for whom one teacher should be provided.

METHOD OF DETERMINING OVER AGE

SUPPLEMENTARY REPORT ON
EDUCATIONAL ASPECTS OF THE
PUBLIC SCHOOL SYSTEM
OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY
OF THE BOARD OF ESTIMATE
AND APPORTIONMENT

PART II

Subdivision I

Elementary Schools

SECTION F.—PROBLEMS IN ELEMENTARY SCHOOL ORGANIZATION
AND ADMINISTRATION

Over Age and Method of Determining Over Age

BY

FRANK P. BACHMAN, PH.D.

Formerly Assistant Superintendent of Schools, Cleveland, Ohio

CITY OF NEW YORK
1911-1912

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OVER AGE AND METHOD OF DETERMINING OVER AGE

Summary of the Report

The report may be summarized as follows:

1. Conclusions.—(1) Over age has social, educational, and financial significance, because:

(a) Over-age children tend to fail to complete the work of the elementary school, just to the extent that they fall behind their grade for their age.

(b) Over-age children, by tens on tens of thousands, falling behind the grade for their age, enter practical pursuits with only a sixth or seventh grade education.

(c) To provide special classes for the instruction of over-age pupils as is now done, increases the cost of instructing such pupils, and the presence of a large number of over-age pupils in a system of schools increases the number of class rooms, and hence, the number of buildings needed to care for a given school population.

(2) Age-grade standards for "being in the grade" are a wrong basis for age-grade reports, because:

(a) A child is not under age, normal age, or over age by reason of being of a certain age and by reason of "being in a certain grade." A child is under age, normal age, or over age in view of the task in hand, viz.: completing the entire elementary school course of study by a given age.

(b) To make age-grade reports on the basis of age-grade standards for "being in the grade" is to *decrease* decidedly the reported number of over-age children.

(3) Whether or not a child is under age, normal age, or over age, can be determined exactly only in view of the normal age limits fixed for entering, and for completing each of the several grades of the elementary school.

(4) The age-grade standards for entering and for completing each of the several grades of the elementary school will differ according to whether up to fifteen years of age or up to fourteen and a half years of age is accepted as the upper normal age limit for completing the elementary school.

(5) Age-grade reports are most reliable and exact when made on the basis of age-grade standards for entering and for completing each of the several grades of the elementary school, and when these age-

grade standards are determined in view of up to fourteen years and a half as the upper normal age limit for completing the elementary school.

(6) Age-grade reports to be valuable as a means of guidance to the Board of Education and to administrative officers, should be made at the end of the year for the official school year as a whole. Age-grade reports to be valuable to principals and teachers in the proper classification and instruction of pupils should be made at the beginning of the school term or year.

(7) When an age-grade report is made at the end of the year for the official year as a whole, the ages of the children should be taken as of the date of the close of the official school year. When an age-grade report is made at the beginning of the school term or year, the ages of the children should be taken as of the date of the beginning of the official school year.

(8) In making age-grade reports, the ages of the children should be based on the date of birth; year, month and day, and taken in terms of years, months and days.

(9) There should be included in an age-grade report for the elementary school, all children who can be classified with reasonable accuracy as having completed or as entering one or the other of the several grades of the elementary school. The only pupils in the elementary school who cannot be included in such a report are those in ungraded classes for physically and mentally defective pupils and probably those in trade-schools.

(10) Age-grade reports, whether made at the end of the year, for the official year, or made at the beginning of the year, for a given class of a given grade, or for the system as a whole, should be based on the total or net register.

(11) The age-grade reports of the City Superintendent of Schools of the City of New York are of but little value for purposes of information, administration and instruction, because:

(a) His age-grade reports are based on age-grade standards for "being in the grade."

(b) His age-grade reports are made for the grades of the several years instead of for each of the several grades, and after the grades and classes are reorganized for the new year.

(c) Up to fifteen, instead of up to fourteen years and a half, is accepted as the upper normal age limit for completing the elementary school.

(d) His age-grade reports have neither the value belonging to age-grade reports for the official school year, nor the worth belonging to such reports made at the beginning of the year, for neither do they supply definite information on the age-grade status in the system as a whole, nor do they supply information useful to principals and teachers in the classification and instruction of children.

(e) The ages of the children used in his age-grade reports are as

of the date the schools are closed at the end of the year for instruction, instead of as of the date of the close of the official year.

(f) His age-grade reports have to do only with the children on register at the end of the year in the regular classes of the grades, hence are not age-grade reports for the elementary school as a whole, but for the regular classes of the grades only. By reason of taking no account whatever of the tens on tens of thousands of pupils who drop from the regular classes during the course of the official year, they are partial and incomplete reports even for the pupils in the regular classes. By reason of the City Superintendent taking tens on tens of thousands of pupils from the regular classes of the grades, and putting them in special classes, and by reason of ignoring these pupils, all of whom are presumably over age, his age-grade reports shed little light on the age-grade conditions in the elementary school as a whole. Hence, the age-grade reports of the City Superintendent of Schools are incomplete and inexact both for the grades and for the elementary school as a whole.

2. Recommendations.—In view of the foregoing conclusions we recommend:

(1) That the methods employed by the City Superintendent of Schools in making age-grade reports be abandoned.

(2) That an age-grade report be made at the end of the year for the official school year as a whole, to supply the Board of Education and its administrative officers with the basic information needed for their guidance.

(3) That an age-grade report be made at the beginning of the year to supply principals and teachers with the facts upon which they may rely in making classification and in carrying on the instruction of pupils; that these reports be for the several classes of each school and for each school, but not for the system as a whole.

(4) That up to fourteen years and a half be accepted as the upper normal age limit for completing the elementary school.

(5) That age-grade reports be made according to the provisions of this report.

(6) We would also recommend:

(a) That data be collected at once by the Board of Education on the ages and grades of children; that complete and exact information may be had with respect to the age-grade conditions in the elementary schools of the City;

(b) That data be collected at once on the causes of over age in the elementary schools, and

(c) That an immediate investigation be made of to what extent pupils now in special classes are classified and instructed in view of the causes of their being over age.

OVER AGE AND METHOD OF DETERMINING OVER AGE

I

Social, Educational and Financial Significance of Over Age

The Educational Laws of the State of New York not only make it obligatory on financial and school officials to provide such facilities that the children of the state may have free opportunity to secure a complete elementary education, but these laws seek also to guarantee this opportunity to each child of the state.

The Compulsory Education Law, which seeks to guarantee to the child free opportunity to secure a complete elementary education, requires, under certain conditions, that children attend school regularly until they are sixteen years of age. But it is clearly indicated in this law that normal children, who attend school regularly, should be able to complete their elementary education by the time they are fourteen years old.¹ Hence, the state considers the attainment of the fourteenth birthday the normal age to complete the elementary school.

How impossible it is for children to complete the work of the elementary school of the City of New York by their fourteenth birthday is revealed by the fact that of the pupils, exclusive of those in special classes, thirteen to fourteen years old, on the register after promotion June 30th for the five years 1907-1911 inclusive, only 20.82 per cent. had attained the eighth grade; 29.92 per cent., the seventh; 25.57 per cent., the sixth; 15.44 per cent., the fifth; 6.06 per cent., the fourth, and 2.19 per cent. were still floundering around in the third and lower grades.² That is, if these thirteen to fourteen year old pupils remained in school and progressed regularly, 20.82 per cent. would be between fourteen and fifteen years old on completing the elementary school; 29.92 per cent. between fifteen and sixteen; 25.57 per cent. between sixteen and seventeen; 15.44 per cent. between seventeen and eighteen, and 8.25 per cent. eighteen and older.

Pupils in considerable numbers remain in the elementary schools of the City of New York from one to three years after they are fourteen in order to complete the course.³ Still larger numbers on becoming fourteen or on receiving employment certificates drop from school permanently, irrespective of the grade they have attained. It is estimated

¹ See Compulsory Education Law of the State of New York, Section 622.

² See Report on Promotion, Non-Promotion, and Part-Time, Vol. I.

³ See Report on Promotion, Non-Promotion, and Part-Time, Vol. I.

that of all the pupils entering the elementary schools of the City of New York, 3.31 per cent. drop out before completing the work of the fifth year; 11.29 per cent. before completing the work of the sixth year; 38.55 per cent. before completing the work of the seventh year, and only 41.33 per cent. ever remain to complete the eighth or final year.¹

The fact that thousands on thousands of children remain in the elementary schools of the City of New York until they are sixteen, seventeen and eighteen years of age in order to complete the course of study and that tens on tens of thousands of children, though remaining until they are fourteen and older, drop from school permanently without having been able to advance beyond the work of the sixth or seventh year, leads to the question of the grade a child of a given age should be entering or should be completing by a given age.

Certain age limits have been fixed for entering, and for completing each of the several grades of the elementary school. Children entering a grade before the age fixed for entering, or completing a grade before the age fixed for completion, are termed *under age*; children entering a grade at the age fixed for entrance, or completing a grade at the age fixed for completion, are termed *normal age*; children entering the grade older than the age fixed for entrance, or completing the grade older than the age fixed for completion, are termed *over age*; that is, are behind the grade for their age.

Had children an indefinite length of time in which to secure an education, the fact that they were behind the grade for their age would have no educational significance. But over age has educational significance, because the state only directly secures to the child the opportunity of attending school until he is fourteen, and because children in large numbers on becoming fourteen, either from necessity or choice, drop from school permanently. Hence, for children to fall behind their grade one or more years, means that they will probably drop from the elementary school without completing one or more of the upper grades, and, in consequence, enter on some practical pursuit with only a sixth or seventh grade education.²

Since over-age children tend to fail to complete the work of the elementary school, just to the extent that they are behind their grade for their age, over age becomes one of the primary standards of judging of the efficiency of a school system. When judged in view of the purpose of the elementary school, viz., to give each normal child a complete elementary education, that system of schools is the most efficient—all things considered—which has the smallest per cent. of over-age pupils, because a large proportion of its pupils will continue until they complete the entire elementary school course of study; whereas, that system is the least efficient which has the highest per cent. of over-age

¹ See Report on Promotion, Non-Promotion, and Part-Time, Vol. I.

² See Report on Promotion, Non-Promotion, and Part-Time, Vol. I.

pupils, because a small proportion of its pupils will continue until they complete the entire course.

The number of over-age pupils in a school system and the length of time these pupils are over age are therefore not academic questions, but questions of the highest practical importance, because the number of pupils over age is an index to the probable number of children who will drop permanently from school before completing the course of study, and the length of time these pupils are over age is an index to the extent these over-age children will probably fail to complete the course.¹ Hence, definite knowledge by grades of the number of over-age children in a system and definite knowledge of the length of time these pupils are over age, supply the basis of judging to what extent the system is succeeding or not succeeding in giving to each normal child a complete elementary education, and also of judging of the efficiency or inefficiency of the organization and administration of the particular system of schools.

The question of over age has, however, not only great social and educational significance, but also financial significance. With the recognition of the tendency among over-age pupils to drop from school without having completed the entire elementary school course of study, provisions have been made by school authorities to give over-age pupils special attention, to the end that they may be able to advance further in the course of study than it would be possible for them to advance were they left in regular classes. There were in the elementary schools of the City of New York, for example, May 31st, 1912, 888 such classes, with an average register of thirty-two pupils per class and a total register of 28,083 pupils.² In regular classes, one class room accommodates and one teacher instructs forty-five pupils; special classes for over-age pupils are, however, organized, as a rule, on the basis of thirty pupils per class room and teacher. Hence, to organize special classes for over-age pupils is to increase the cost of educating such pupils beyond what it would cost to instruct them in regular classes. The presence of a large number of over-age pupils in a system of schools and the consequent necessity of providing special classes for the instruction of such children, if they are to advance much, if any, beyond the fifth grade before dropping from school permanently, add therefore, materially to the cost of the elementary school; whereas in a system having a small number of over-age pupils there is need of but few, if any, special classes for such pupils, and hence, the ordinary cost of the elementary school is increased but little, if at all.

Further, over-age pupils, by floundering around during their entire school life in the lower grades, instead of advancing regularly through

¹ Over age is much more serious in the upper grades than in the lower grades, because, by the proper classification and instruction of pupils, a considerable portion of the pupils in the lower grades will be able to reduce the length of time they are over age by the time they reach the upper grades.

² Estimate of new teachers needed in elementary schools for 1913.

the school, congest these grades. In consequence, the class rooms in the lower grades are crowded, whereas those in the upper grades have empty seats. In a system of schools having a large number of over-age pupils, there are, therefore, more class rooms required to accommodate a given school population than are required to care for the same number of pupils in a system of schools having few over-age pupils. Hence, the financial significance of over age.

It is not an easy matter to determine accurately the number of over-age pupils in a system of schools. To determine accurately the number of over-age pupils and the length of time these pupils are over age, or to make an age-grade report, it is necessary to have clearly in mind: (1) the age-grade standards to be used; (2) the time to make the report—shall it be for the beginning or for the end of the official school year—(3) when to take the ages of the children—shall their ages be taken at the end or at the beginning of the official school year, or at the close or the opening of the schools for instruction—(4) how to take the ages of the children, and, finally, (5) what children to include. We shall consider each of these points in turn.

II

The Age-Grade Standards to Use in Making Age-Grade Reports

1. Age-Grade Standards for Being in a Grade.—Writers on over age and superintendents in making age-grade reports have been none too careful in determining the proper age-grade standards to be used in judging whether or not a pupil is under age, normal age or over age. The age-grade standards given in the following quotations are typical of those in use:

"Normal age in this study is defined as follows: Children who are 6 or 7 years of age in the first grade, 7 or 8 years of age in the second grade, 8 or 9 years of age in the third grade, and so on, are normal."¹

"Normal Ages of Children in the Grades

<i>Grade</i>	<i>Age</i>
First Grade	6 to 8
Second "	7 " 9
Third "	8 " 10
Fourth "	9 " 11
Fifth "	10 " 12
Sixth "	11 " 13
Seventh "	12 " 14
Eighth "	13 " 15" ²

"Counting 7 years as standard age for first year, 8 years for second, 9 years for third, 10 years for fourth, etc."³

¹ Strayer: *Age and Grade Census of Schools and Colleges*, p. 12.

² Ayres: *Laggards in Our Schools*, p. 35.

³ Annual Report of the Board of Education of Newark, N. J., 1910-11, p. 161.

It will be observed that the age-grade standards of the foregoing quotations are in each case the normal ages for "being in the grade" and that in not one of these quotations is there an intimation that to determine accurately whether or not a pupil is under age, normal age, or over age, there is need of age-grade standards fixing the normal age limits for entering and for completing each of the several grades of the elementary school. What is true of the age-grade standards in these quotations is, with but one or two exceptions, true of those given in all articles written up to the present time on over age and in all school reports on over age, viz.: the age-grade standards are for "being in the grade."

"Being in the grade" has only to do indirectly with whether or not a child is under age, normal age, or over age. To make the age-grade standards for "being in a grade" the basis of determining whether or not a pupil is under age, normal age or over age is to use a wrong basis, and in consequence to make unreliable and inaccurate age-grade reports, for the following reasons.

(1) A child is not under age, or normal age, or over age by reason of being of a certain age, and "being in a given grade." A child is under age, or normal age, or over age in view of the task in hand, viz.: completing the entire elementary school course of study by a given age. When the whole task is subdivided, as it is, into several units or grades, a child is under age, or normal age, or over age as he progresses through the school, according as he is younger or older on finishing a given grade than the normal age limits fixed for completing the respective grade. To be sure, when the normal age-grade standards for completing each of the several grades are determined, these standards may in turn be employed as the basis of fixing the normal age limits for entering each of the several grades. With these age-grade standards in hand, it is possible to determine under age, normal age and over age from the point of view of entering a grade with the same accuracy as from the point of view of completing a grade. Hence, to determine accurately whether or not a child is under age, or normal age, or over age, involves fixing on the normal age limits for entering and on the normal age limits for completing each of the several grades—which has not as yet been done.

(2) An illustration will suffice to show that age-grade standards for "being in the grade" supply a wrong basis for age-grade reports.

(a) The normal ages for being in the seventh grade according to Dr. Ayres, are 12 up to 14. (See quotation, page 592.) Were a boy "A," 13 years and 11 months old June 30th, in the 7th grade at the close of the year, when an age-grade report was made, such a boy judged by the age-grade standards for "being in the grade" would ordinarily be *recorded and reported as of normal age*. As a matter of fact, whether or not "A" is actually of normal age depends (a) on

whether the age-grade report is made *before* or *after* promotion and (b) on whether "A" is to be promoted or is not to be promoted.

Case I.—When the age-grade report is made *before promotion*. When the age-grade report is made at the end of the year *before promotion*, pupils are "in" the respective grades where they have been registered during the whole, or a part of the year ending. Hence, were "A" 13 years and 11 months old in the seventh grade and to be *promoted*, it would be correct to record and report him as of normal age. But were "A" *not to be promoted*, it is obvious that it will probably be necessary for him to remain an entire year in the seventh grade in order to complete it; that is, until he is 14 years and 11 months old. Instead, therefore, of "A" being of normal age, he is, in fact, one year over age. Hence, to report "A" of normal age is to give him the advantage of the time it will probably take him to complete the grade, an entire year.

What is true of "A" when age-grade reports are made *before promotion* on the basis of the age-grade standards for "being in the grade" is true, within limits, of all children whose ages are near the upper age limit for "being in the grade." That is, to determine under age, normal age and over age *before promotion* on the basis of the age-grade standards for "being in the grade" is practically to subtract one year from the ages of all *non-promoted* children or is to give *such pupils* an age advantage of the time it takes to complete a grade, an entire year.¹ In consequence, pupils are reported as of normal age who are actually over age, and this results in an increase in the reported number of pupils of normal age and decrease in the reported number of over-age pupils. (See Tables I and I', pp. 597-8.)

Case II.—When the age-grade report is made *after promotion*. When the age-grade report is made at the end of the year *after promotion*, *non-promoted* pupils are "in" the respective grades where they have been registered during a whole or a part of the year ending, whereas, *promoted pupils* are "in" the respective grades to which they have just been advanced. Hence, were "A" 13 years and 11 months old, *not promoted*, and in the seventh grade, it is obvious that although he has been "in" the seventh grade for a whole or part of the year ending, for all practical purposes he is just entering the seventh grade. To complete this grade, it will probably be necessary for him to remain "in the grade" an entire year, that is, until he is 14 years and 11 months old.

¹ In a system where promotions are made semi-annually, and an age-grade report is made, at the end of each term, *before promotion*, on the basis of the age-grade standards for "being in the grade" for each of the sixteen grades, non-promoted pupils are given the advantage of only a half year, the time to complete a grade. But in a system having semi-annual promotions, where an age-grade report is made *before promotion* on the basis of the age-grade standards for "being in the grade" and for the grades of each of the several years, at the end of the year only, in such a case *non-promoted pupils* in the classes of all *A grades* are given the advantage of an entire year, while *non-promoted pupils* in the classes of all *B grades* and the *promoted pupils* in the classes of all *A grades* are given the advantage of a half year. (See Table I, p. 597, and Table III', p. 603.)

Instead, therefore, of "A" being of normal age as he would be recorded and reported when the age-grade report is made on the basis of the age-grade standards for "being in the grade," he is actually one year over age, and to report him as of normal age is to give him the advantage of an entire year, the time it will probably take him to complete the grade.

Finally, were "A," 13 years and 11 months old, and *promoted* from the sixth grade to the seventh grade, to complete the seventh grade it will probably be necessary for him to remain "in" the grade an entire year; that is, until he is 14 years and 11 months old. Instead, therefore, of "A" being of normal age as he would be reported when the age-grade report is made *after promotion* and on the basis of the age-grade standards for "being in the grade," he is in reality one year over age, and to report him as of normal age is equivalent to subtracting one entire year from his age.

What is true of "A" when age-grade reports are made *after promotion* on the basis of age-grade standards for "being in the grade" is true within limits of all children whose ages are near the upper age limit for "being in the grade," that is, to determine under age, normal age, and over age *after promotion* on the basis of the age-grade standards fixed for "being in the grade" is to give to *non-promoted and also to promoted children*, hence to *all children*, an age advantage of the time it takes to complete a grade, an entire year, and is equivalent to subtracting an entire year from the ages of all children.¹ In consequence pupils are reported as of normal age, who are actually over age, and this results in an increase in the reported number of pupils of normal age and a decrease in the reported number of over-age pupils. (See Tables I and I', pp. 597-8.)

(b) The age-grade standards for being in the seventh grade are, according to Dr. Ayres (see p. 592), 12 to 14, and for being in the eighth grade, 13 to 15. Were a boy "B," 12 years and 1 month old, in the seventh grade at the end of a year, whether such a boy was reported as of normal age or as under age, would depend on whether or not the age-grade report was made *before* or *after* promotion, that is *before* or *after* the grades and classes were reorganized for the new year, and on whether or not he was promoted or not promoted. Were "B" 12 years and 1 month old, in the seventh grade at the end of the year, and the age-grade report made *before promotion*, "B"

¹ In a system where promotions are made semi-annually and an age-grade report is made at the end of each term, *after promotion*, on the basis of the age-grade standards for "being in the grade," for each of the sixteen grades, all pupils are given the advantage of a half year. But in a system having semi-annual promotions, where an age-grade report is made *after promotion* on the basis of the age-grade standards for "being in the grade" for the grades of the several years, at the end of the year only, in such a case *promoted* pupils in the classes of all *A grades* and *non-promoted* pupils in the classes of all *B grades* are given the advantage of a half year, while *non-promoted* pupils in the classes of all *A grades* and *promoted* pupils in the classes of all *B grades* are given the advantage of an entire year. (See Table I', p. 597, and Table II', p. 601.)

would be recorded as of normal age, whereas were "B" promoted, and the age-grade report made *after promotion*, and were "B" reported from the eighth grade, the grade to which he has just been advanced, he would be recorded as being under age. What is true of "B" is true, within limits, of all children whose ages are near the lower age limit for "being in a grade." That is, when the age-grade report is made *before promotion* pupils are recorded of normal age, who, when the age-grade report is made *after promotion*, are recorded as under age. In consequence, to make age-grade reports on the basis of the age-grade standards for being in the grade, *before promotion*, is to increase the recorded number of pupils of normal age and to decrease the recorded number of pupils under age, and to make such reports *after promotion*, is to increase the recorded number of pupils under age, and decrease the recorded number of pupils of normal age. (See Tables I and I', pp. 597-8.)

To summarize (a) and (b), to make an age-grade report, either before promotion or after promotion, on the basis of the age-grade standards for being in the grade, is to increase the reported number of pupils of normal age and to decrease the reported number of pupils over age. Obviously age-grade standards which permit of such arbitrary changes in the recorded number of pupils under age, normal age and over age, are wrong age-grade standards, and it is equally obvious that age-grade reports made on the basis of such age-grade standards are unreliable and inaccurate.

The age-grade standards proposed in 1904 by the City Superintendent of Schools of the City of New York, and used by him now as the basis of his age-grade reports, are given below:

"The normal ages of children in the several grades are as follows:

"First-year Grades	6 to 8 years
Second-year "	7 " 9 "
Third-year "	8 " 10 "
Fourth-year "	9 " 11 "
Fifth-year "	10 " 12 "
Sixth-year "	11 " 13 "
Seventh-year "	12 " 14 "
Eighth-year "	13 " 15 " " ¹

The age-grade standards proposed and used by the City Superintendent of Schools as the basis of his age-grade reports are, it will be observed, for "being in the grade." Hence, in view of the foregoing, the age-grade standards employed by the City Superintendent of Schools supply a wrong basis of determining whether or not a pupil is under age, or normal age, or over age, and age-grade reports made on the basis of such age-grade standards are unreliable and inaccurate.

¹ Annual Report of the City Superintendent of Schools for 1904, p. 47; also for 1911, pp. 53 ff.

In 1904, the year in which the City Superintendent of Schools proposed the foregoing age-grade standards for "being in the grade," he made his age-grade report *before* promotion, that is, before the classes and grades were reorganized for the new year. There were included in this age-grade report only the children on register June 30th, when the schools closed for instruction.¹ His age-grade report for 1905 was made in the same way as the report for 1904, with one exception, the age-grade report for 1905 was made *after* promotion, that is, after the classes and grades were organized for the new year.² The effect of this change from making his age-grade report *before* promotion to making it *after* promotion, on the reported number and per cent. of under age, normal age and over age pupils, is shown in Table I and Table I' (See note 3).

Table I—Shows the Number and Per Cent. of Under Age, Normal Age, and Over Age Pupils, When an Age-Grade Report is Made Before Promotion, on the Basis of Age-Grade Standards for "Being in the Grade" (As made by the City Superintendent of Schools in 1904).

GRADES	Register as of June 30 Before Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1st Year.....	956	17	1.78	836	87.45	103	10.77
2nd Year.....	907	3	.33	715	78.83	189	20.84
3rd Year.....	920	20	2.17	658	71.52	242	26.31
4th Year.....	936	17	1.82	568	60.68	351	37.50
5th Year.....	952	13	1.36	515	54.10	424	44.54
6th Year.....	892	27	3.03	460	51.57	405	45.40
7th Year.....	1,121	44	3.92	647	57.72	430	38.36
8th Year.....	816	43	5.27	499	61.15	274	33.58
Total.....	7,500	184	2.45	4,898	65.31	2,418	32.24

¹ Annual Report of the City Superintendent of Schools for 1904, pp. 42 ff.

² Annual Report of the City Superintendent of Schools for 1905, pp. 58 ff.

Note 3.—In order to make clear the several points of this report, age-grade data were collected for all the pupils on the register during the course of the February-June term, 1910-11, in five elementary schools of the City of New York. These five schools, having a total or net enrollment of 8,249 pupils, were selected at random from the schools having all grades, one school from each of the several boroughs. The data used in all the illustrative tables of this report are for the same children. Consequently any differences that appear are due to differences in method of determining under age, normal age, and over age, or in making age-grade reports.

Table I'—Shows the Number and the Per Cent. of Under Age, Normal Age and Over Age Pupils, When an Age-Grade Report is Made After Promotion, on the Basis of Age-Grade Standards for "Being in the Grade" (As made by the City Superintendent of Schools in 1905).¹

GRADES	Register as of June 30 After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1st Year.....	525	17	3.24	476	90.67	32	6.09
2nd Year.....	904	147	16.26	663	73.34	94	10.40
3rd Year.....	938	122	13.01	662	70.57	154	16.42
4th Year.....	934	106	11.35	603	64.56	225	24.09
5th Year.....	889	73	8.21	549	61.76	267	30.03
6th Year.....	1,010	102	10.10	561	55.54	347	34.36
7th Year.....	1,013	108	10.66	578	57.06	327	32.28
8th Year.....	915	131	14.32	575	62.84	209	22.84
Total.....	7,128	806	11.31	4,667	65.47	1,655	23.22

Age-grade Table I conforms in every respect to the age-grade report of the City Superintendent of Schools for 1904; age-grade Table I' conforms in every respect to his age-grade report for 1905. Consequently, Table I and Table I' show what the effect was on the reported per cent. of under age, normal age, and over age pupils, of the City Superintendent of Schools making his age-grade report in 1905 *after promotion*.

Table I, in which under age, normal age and over age are determined *before promotion*, shows that of the pupils on register *before promotion*, June 30th, in the five schools in question, 2.45 per cent. were under age, 65.31 per cent. of normal age, and 32.24 per cent. over age. Table I', in which under age, normal age and over age are determined *after promotion*, shows that for the same pupils, with the one exception noted (See note 1) and for the same schools 11.31 per cent. of the pupils were under age, 65.47 per cent. of normal age and 23.22 per cent. over age.² To make an age-grade report *before promotion*, on the basis of age-grade standards for being in the grade, is, therefore, in contrast to making it *after promotion*, to decrease the recorded number of pupils under age and to increase the recorded number of pupils

¹ It will be observed that in the five schools in question the register, as of June 30th in Table I, is given as 7,500, whereas, as in Table I', the register as of June 30th is given as 7,128. This difference in register is due to the fact that when an age-grade report is made *after promotion* 8B promoted pupils are necessarily excluded.

² How typical these five schools are of the system as a whole is indicated by the fact that the reported per cent. of over-age pupils in the grades of the several years was 23.3 per cent. Annual Report of the City Superintendent of Schools for 1911, p. 59.

over age, whereas, to make such a report *after promotion* is, in contrast to making it *before promotion*, to decrease the recorded number of pupils over age, and to increase the recorded number of pupils under age and normal age.

In a word, by a change in statistical method, that is, by making his age-grade report in 1905 *after promotion*, instead of, as in 1904, *before promotion*, the City Superintendent was able to report for the elementary schools of the City, when judged on the basis of Tables I and I', 8.86 per cent. more pupils under age and 9.02 per cent. less pupils over age, than he would have been able to report had he made his report for 1905, as in 1904, *before promotion*.

This being true, there is little wonder that the City Superintendent of Schools was able to report in 1905 as follows:

"The next table shows the number in each year grade above normal age, on June 30th, 1905, and the percentage of this number on the whole number of children in the grade, together with the corresponding percentage in 1904:

GRADES	Number of Pupils	Number Above Normal Age	Per Cent. of Whole Number	Corresponding Per Cent. in 1904
First Year.....	58,330	9,707	16.6	23.2
Second Year.....	83,881	21,508	25.6	38.1
Third Year.....	84,364	28,733	34.1	45.0
Fourth Year.....	81,114	32,577	40.1	49.2
Fifth Year.....	72,277	30,998	42.9	49.0
Sixth Year.....	54,910	20,660	37.6	42.0
Seventh Year.....	39,982	11,201	28.0	32.8
Eighth Year.....	27,176	5,165	19.0	25.3
Total.....	502,034	160,549	32.0	39.0

"This table shows a considerable improvement over the conditions which obtained when I first brought the facts to light as to the ages of the pupils in the grades in my report for 1904."¹

The City Superintendent of Schools points to the improved conditions with respect to the number of pupils over age in 1905 over 1904, his table showing that the per cent. of over-age pupils in the grades was reduced from 39 per cent. in 1904 to 32 per cent. in 1905, a reduction of 7 per cent. The City Superintendent of Schools was doubtless unaware of the effect of making his age-grade report in 1905 *after promotion* instead of, as in 1904, *before promotion*, on the reported per cent. of pupils under age, normal age and over age. At all events, he failed to call attention to the change in the time of making his age-grade report, and to point out that this change alone reduced the reported per cent. of over-age pupils approximately 9.2 per cent. In a word, had his age-

¹ Annual Report of the City Superintendent of Schools for 1905, p. 63.

grade report for 1905 been made as in 1904, the reported per cent. of over-age pupils would have been approximately 41.2 per cent. instead of 32 per cent., or approximately 2 per cent. higher than in 1904 instead of, as reported, 7 per cent. lower. Consequently, the reported reduction in the per cent. of over age in 1905 over 1904 was not an actual reduction due to improved conditions in the schools, but probably a reduction due solely to a change in statistical method, viz.: making his age-grade report before instead of after promotion.

There are, in the elementary schools of the City of New York, sixteen grades. The City Superintendent of Schools, however, does not make a separate age-grade report for each of these sixteen grades, the 1A grade, 1B grade, etc., but he makes his age-grade report for the grades—the A and B grades, of each of the several years, first year grades, etc. The effect on the reported number of pupils under age, normal age and over age of the City Superintendent of Schools, making his age-grade report for the grades of each of the several years, instead of for each of the several grades, is shown by Table II and Table II'.

Table II—Shows the Number and Per Cent. of Under Age, Normal Age, and Over-Age Pupils, When an Age-Grade Report is Made After Promotion, on the Basis of Age-Grade Standards for "Being in the Grade" and for the Grades of the Several Years (As made by the City Superintendent of Schools since 1905).

GRADES	Register as of June 30 After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1st Year.....	525	17	3.24	476	90.67	32	6.09
2nd Year.....	904	147	16.26	663	73.34	94	10.40
3rd Year.....	938	122	13.01	662	70.57	154	16.42
4th Year.....	934	106	11.35	603	64.56	225	24.09
5th Year.....	889	73	8.21	549	61.76	267	30.03
6th Year.....	1,010	102	10.10	561	55.54	347	34.36
7th Year.....	1,013	108	10.66	578	57.06	327	32.28
8th Year.....	915	131	14.32	575	62.84	209	22.84
Total.....	7,128	806	11.31	4,667	65.47	1,655	23.22

Table II'—Shows the Number and Per Cent. of Under Age, Normal Age, and Over-Age Pupils, When an Age-Grade Report is Made After Promotion, on the Basis of the Age-Grade Standards for "Being in the Grade" and for Each of the Several Grades Separately.

GRADES	Register as of June 30 After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1A.....	131	4	3.05	106	80.92	21	16.03
1B.....	394	129	32.74	240	60.91	25	6.35
2A.....	486	144	29.63	292	60.08	50	10.29
2B.....	418	73	17.46	278	66.51	67	16.03
3A.....	486	106	21.81	298	61.32	82	16.87
3B.....	452	81	17.92	265	58.63	106	23.45
4A.....	477	89	18.66	271	56.81	117	24.53
4B.....	457	73	15.97	230	50.33	154	33.70
5A.....	473	63	13.32	256	54.12	154	32.56
5B.....	416	45	10.82	210	50.48	161	38.70
6A.....	548	84	15.33	255	46.53	209	38.14
6B.....	462	59	12.77	204	44.16	199	43.07
7A.....	436	74	16.97	188	43.12	174	39.91
7B.....	577	80	13.86	287	49.74	210	36.40
8A.....	515	101	19.61	265	51.46	149	28.93
8B.....	400	68	17.00	214	53.50	118	29.50
Total.....	7,128	1,273	17.86	3,859	54.14	1,996	28.00

Age-grade Table II conforms in every respect to the age-grade reports as made by the City Superintendent since 1905.¹ Age-grade Table II' conforms in every respect to the age-grade reports as made by the City Superintendent since 1905, with one exception, the report is for each of the grades separately. Consequently, Table II and Table II' show what the effect was, on the reported number of under-age, normal-age and over-age pupils, of the City Superintendent of Schools making his age-grade reports for the grades of the school year instead of for each of the several grades.

Table II, in which the number of pupils under age, normal age and over age is reported for the grades of the several years, shows that 11.31 per cent. of the pupils on register June 30th after promotion in the

¹ See Annual Report of the City Superintendent of Schools for 1905, pp. 58 ff.; and for 1911, pp. 53 ff.

five schools in question were under age, 65.47 per cent. normal age, and 23.22 per cent. over age, whereas Table II', in which the number of pupils under age, normal age, and over age is reported for each of the grades, shows that, of the same pupils on register June 30th, after promotion in the same schools, 17.86 per cent. were under age, 54.14 per cent. were normal age, and 28 per cent. were over age. In a word, the City Superintendent of Schools, by making his age-grade reports for the grades of the several years, is able to report, judged on the basis of Tables II and II', 4.78 per cent. fewer over-age pupils in the elementary schools of the City of New York than if he made his age-grade report for each of the several grades.

The combined effect, on the reported number of under age, normal age, and over-age pupils, of the City Superintendent of Schools making his age-grade reports *after promotion* and for the grades of the several years, instead of making them *before promotion* and for each of the grades separately, is shown by Table III and Table III'.

Table III—Shows the Number and Per Cent. of Under Age, Normal Age, and Over-Age Pupils, When an Age-Grade Report is Made After Promotion, on the Basis of Age-Grade Standards for "Being in the Grade," and for the Grades of the Several Years (as made by the City Superintendent of Schools since 1905).

GRADES	Register as of June 30 After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1st Year.....	525	17	3.24	476	90.67	32	6.09
2nd Year.....	904	147	16.26	663	73.34	94	10.40
3rd Year.....	938	122	13.01	662	70.57	154	16.42
4th Year.....	934	106	11.35	603	64.56	225	24.09
5th Year.....	889	73	8.21	549	61.76	267	30.03
6th Year.....	1,010	102	10.10	561	55.54	347	34.36
7th Year.....	1,013	108	10.66	578	57.06	327	32.28
8th Year.....	915	131	14.32	575	62.84	209	22.84
Total.....	7,128	806	11.31	4,667	65.47	1,655	23.22

Table III'—Shows the Number and Per Cent. of Under Age, Normal Age, and Over-Age Pupils When an Age-Grade Report is Made Before Promotion on the Basis of Age-Grade Standards for "Being in the Grade," and for Each of the Grades.

GRADES	Register as of June 30 Before Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1A.....	481	17	3.53	402	83.58	62	12.89
1B.....	475	5	1.05	393	82.74	77	16.21
2A.....	405	3	.74	294	72.59	108	26.67
2B.....	502	5	1.00	363	72.31	134	26.69
3A.....	448	18	4.02	275	61.38	155	34.60
3B.....	472	11	2.33	312	66.10	149	31.57
4A.....	459	17	3.70	234	50.98	208	45.32
4B.....	477	7	1.47	263	55.13	207	43.40
5A.....	424	10	2.36	175	41.27	239	56.37
5B.....	528	16	3.03	255	48.30	257	48.67
6A.....	462	18	3.90	188	40.69	256	55.41
6B.....	430	19	4.42	195	45.35	216	50.23
7A.....	583	35	6.00	232	39.80	316	54.20
7B.....	538	35	6.50	272	50.56	231	42.94
8A.....	436	33	7.57	200	45.87	203	46.56
8B.....	380	32	8.42	202	53.16	146	38.42
Total.....	7,500	281	3.75	4,255	56.73	2,964	39.52

Age-grade Table III conforms in every respect to the age-grade reports as made by the City Superintendent of Schools since 1905. Age-grade Table III' conforms in every respect to the age-grade reports as made by the City Superintendent of Schools since 1905, with two exceptions, whether or not pupils are under age, normal age or over age is determined *before promotion*,¹ and the age-grade table is for each of the several grades. Consequently, Table III and Table III' show what the effect was, on the reported number of under age, normal age and over-age pupils, of the City Superintendent making his age-grade reports *after promotion* and for the grades of the several years.

Table III, in which the number of pupils under age, normal age and over age is reported *after promotion* and for the grades of the several years, shows that 11.31 per cent. were under age, 65.47 per cent. normal age, and 23.22 per cent. over age. Table III', in which the number of

¹ That is, before the classes and grades are organized for the new year.

pupils under age, normal age and over age, is reported *before promotion* and for each of the several grades, shows, for the same pupils (with the one exception noted, see p. 598) and for the same schools, that 3.75 per cent. were under age, 56.73 per cent. of normal age, and 39.52 per cent. were over age. In a word, the City Superintendent of Schools is able to report when judged on the basis of Table III and Table III', 7.56 per cent. more pupils under age, 8.74 per cent. more pupils normal age, and 16.30 per cent. less pupils over age, than if he made his age-grade reports *before promotion* and for each of the sixteen grades separately.

The age-grade reports of the City Superintendent of Schools are, therefore, not only unreliable and inaccurate, by reason of the wrong basis thereof—age-grade standards for being in the grade—but they are rendered still more unreliable and inaccurate by being for the grades of the several years instead of as they should be for each of the several grades.

2. Age-Grade Standards for Entering and for Completing Each of the Several Grades.—What the normal age limits for entering and for completing each of the several grades of the elementary schools are, when determined, depends on the age accepted for completing the entire elementary school course of study. One group of writers and school officials resting their case on the following facts: (1) that the legal age of entering the elementary school is six; (2) that children entering at six years of age have the best chance of advancing regularly and completing their elementary education prior to their fourteenth birthday¹; (3) that the state only directly guarantees the child to the school up to his fourteenth birthday²; (4) that children in large numbers, either from necessity or from choice, drop permanently from school on becoming fourteen years old; (5) that, under present methods of school administration and organization, children dropping from school have not advanced much beyond the grade of the sixth or the seventh year³, and (6) that children cannot, with the greatest profit, be held under the régime of the elementary school much, if any, beyond their fourteenth birthday⁴; resting their case on these facts and also on the belief that a democratic school must serve equally all the children and all the people of the community, this group of writers and school officials fixes the upper normal age limit for completing the elementary school just prior to the attainment of the fourteenth birthday.⁵

The elementary school course of study of the City of New York is divided into sixteen units or grades, each in theory one-half year in length. When just prior to the attainment of the fourteenth birthday

¹ Ayres: The Relation Between Entering Age and Subsequent Progress Among School Children.

² Compulsory Education Law of the State of New York, Section 621.

³ See Report on Promotion, Non-Promotion, and Part-Time, pp. 34-36.

⁴ Promotion, Non-Promotion, and Part-Time, pp. 38-40.

⁵ Report of Committee on Uniform Reports, National Education Association Proceedings, 1911, pp. 288-291.

is made the upper normal age limit for completing the elementary school, the normal age for entering and the normal age for completing each of the several grades is respectively as follows:

Table IV—Shows the Normal Age to Enter and the Normal Age to Complete Each of the Grades of the Elementary School, When Up-to-Fourteen is Accepted as the Upper Normal Age Limit for Completing the Elementary School Course of Study.

GRADES	Normal Age to Enter	Normal Age to Complete
1A.....	6 (Sixth Birthday)	up to $6\frac{1}{2}$
1B.....	$6\frac{1}{2}$	up to 7
2A.....	7	up to $7\frac{1}{2}$
2B.....	$7\frac{1}{2}$	up to 8
3A.....	8	up to $8\frac{1}{2}$
3B.....	$8\frac{1}{2}$	up to 9
4A.....	9	up to $9\frac{1}{2}$
4B.....	$9\frac{1}{2}$	up to 10
5A.....	10	up to $10\frac{1}{2}$
5B.....	$10\frac{1}{2}$	up to 11
6A.....	11	up to $11\frac{1}{2}$
6B.....	$11\frac{1}{2}$	up to 12
7A.....	12	up to $12\frac{1}{2}$
7B.....	$12\frac{1}{2}$	up to 13
8A.....	13	up to $13\frac{1}{2}$
8B.....	$13\frac{1}{2}$	up to 14

By reason of the date of birth and the date of the opening of the school term, it is obviously impossible for all children to enter school on their sixth birthday. But it is possible, so far as the date of birth and the date of the opening of the school term are concerned, for all children to enter school between their sixth birthday and the time just prior to becoming six and a half years old. Accordingly, even when just prior to fourteen is accepted as the upper normal age limit to complete the elementary school, for the foregoing practical reasons, a range of a half year is allowed for entering and for completing each of the several grades. Hence, the normal age limits for entering, and the normal age limits for completing each of the several grades are respectively:

Table V—Shows the Normal Age Limits for Entering and the Normal Age Limits for Completing Each of the Grades of the Elementary School When Up-to-Fourteen-and-a-Half is Accepted as the Upper Normal Age Limit for Completing the Elementary School Course of Study.

GRADES	Normal Age Limit for Entering	Normal Age Limit for Completing
1A.....	6 up to 6½	6½ up to 7
1B.....	6½ up to 7	7 up to 7½
2A.....	7 up to 7½	7½ up to 8
2B.....	7½ up to 8	8 up to 8½
3A.....	8 up to 8½	8½ up to 9
3B.....	8½ up to 9	9 up to 9½
4A.....	9 up to 9½	9½ up to 10
4B.....	9½ up to 10	10 up to 10½
5A.....	10 up to 10½	10½ up to 11
5B.....	10½ up to 11	11 up to 11½
6A.....	11 up to 11½	11½ up to 12
6B.....	11½ up to 12	12 up to 12½
7A.....	12 up to 12½	12½ up to 13
7B.....	12½ up to 13	13 up to 13½
8A.....	13 up to 13½	13½ up to 14
8B.....	13½ up to 14	14 up to 14½

These are the normal age limits for entering and for completing each of the several grades which, we believe, conform most closely to the actual working conditions and to the real purpose of the elementary school, viz.: to give each normal child of the community a complete elementary education. Hence, these are the age-grade standards according to which, under age, normal age and over age can be most accurately determined, and, therefore, the age-grade standards which should be used in determining the number of pupils in a school system under age, normal age and over age.

A second group of writers and school officials resting their case on the following facts: (1) that, notwithstanding the legal age of entrance, six, children in large numbers do not enter school until they are seven years of age and older¹; (2) that the child is not directly guaranteed by the state to the school until he is seven years old, and (3) that to give the child a full eight years' elementary school course of instruction the school must have eight years in which to do its work, hence the upper normal age limit for completing the course must be eight years higher than the lower age limit of the compulsory education law; resting their case on these facts, this second group of writers and school officials fixes the upper normal age limit for completing the elementary school just prior to the attainment of the fifteenth birthday. If up to

¹ Twenty-two per cent. of the pupils entering the 1A grade of the elementary schools of the City of New York in 1910-11 were seven years of age and older. See Annual Report of the City Superintendent of Schools for 1910-11, p. 61.

fifteen years of age is accepted as the upper normal age limit for completing the elementary school, the normal age limits for entering, and the normal age limits for completing each of the several grades are respectively as follows:

Table VI—Shows the Normal Age Limits for Entering and the Normal Age Limits for Completing Each of the Grades of the Elementary School, When Just Prior to Fifteen is Accepted as the Upper Normal Age Limit for Completing the Elementary School Course of Study.

GRADES	Normal Age Limit for Entering	Normal Age Limit for Completing
1A.....	6 up to 7	6½ up to 7½
1B.....	6½ up to 7½	7 up to 8
2A.....	7 up to 8	7½ up to 8½
2B.....	7½ up to 8½	8 up to 9
3A.....	8 up to 9	8½ up to 9½
3B.....	8½ up to 9½	9 up to 10
4A.....	9 up to 10	9½ up to 10½
4B.....	9½ up to 10½	10 up to 11
5A.....	10 up to 11	10½ up to 11½
5B.....	10½ up to 11½	11 up to 12
6A.....	11 up to 12	11½ up to 12½
6B.....	11½ up to 12½	12 up to 13
7A.....	12 up to 13	12½ up to 13½
7B.....	12½ up to 13½	13 up to 14
8A.....	13 up to 14	13½ up to 14½
8B.....	13½ up to 14½	14 up to 15

If comparison is made between the normal age limits for entering and for completing each of the several grades of the elementary school as these are given in Table V and Table VI, two differences will be observed: (1) the normal age for entering and the normal age for completing each of the several grades are a half year higher in Table VI than in Table V, and (2) the age-grade standards for entering and for completing each of the several grades in Table VI permit of a range in ages of an entire year, whereas, the age-grade standards in Table V permit of a range in ages of only a half year. This difference of a half year in the upper normal age limit for entering and a half year in the upper normal age limit for completing each of the grades, together with the difference of a half year in the range of the normal age limits for entering and for completing each of the grades materially affect the reported number of pupils, normal age and over age (see Tables VII and VII', pp. 609-10). In consequence, to determine whether or not pupils are under age, normal age or over age, in view of the age-grade standards given in Table VI is to report for a school system a maximum number of pupils of normal age, and a minimum number of pupils over age.

To accept up to fifteen years of age as the upper normal age limit to complete the elementary school and to use the age-grade standards based thereon, as given in Table VI in making age-grade reports, is not only unwise, because of the facts cited (see p. 604) in support of making up to fourteen and a half the upper normal age limit for finishing the elementary school course of study, but unwise because of the following additional reasons:

(1) Because to make up to fifteen the normal age for completing the elementary school course and to report this as the normal age, tends to hide from parents the fact that unless their children enter school at the legal age of entrance (six), and continue regular in attendance, they will probably drop from school without being able to complete the course.

(2) Because to make up to fifteen the normal age for completing the elementary school tends to conceal from school officials the necessity of so adapting the standards of the school and the course of study to the abilities and needs of different groups of children, that children entering at six but only able to continue until they are fourteen or shortly thereafter, may complete an entire elementary school course of instruction.

Reference to the age-grade standards for "being in the grade," proposed and employed by the City Superintendent of Schools (see p. 596), will reveal the fact that he is in the second group of writers and school officials, that is, among those who hold that the upper normal age limit for completing the elementary school is just prior to the attainment of the fifteenth birthday. Had the City Superintendent of Schools made up to fifteen, together with the legal age of entrance (six), the basis of determining the normal age limits for entering, and for completing each of the several grades 1A, 1B, 2A, etc. (see Table VI), and had he determined under age, normal age and over age from the point of view of the normal age limits for entering and for completing each of the several grades, even then he would employ the age-grade standards which yield a larger reported number of pupils of normal age, and a smaller reported number of over-age pupils than when the age-grade standards (see Table V) are employed, based on finishing the elementary school just prior to becoming fourteen and a half. (See Tables VII and VII'.)

The City Superintendent of Schools, however, did not use up to fifteen years of age, together with the legal age of entrance (six), to determine the normal age limits for entering and for completing each of the several grades, the 1A grade, the 1B grade, 2A grade, etc., but, as we have seen, he used these ages to determine the normal ages for "being in the grades" of the several years, first year grades, second year grades, etc.; he does not make his age-grade reports from the point of view of entering or of completing each of the several grades, the 1A grade, the 1B grade, etc., but, as we have seen, from the point of view of "being in the grades" of each of the several years, and finally, since 1905, his

age-grade reports are not only for "being in the grades" of each of the several years, but, as we have seen, are made *after promotion*. All of which contribute to one end, viz.: a very high reported number of pupils of normal age and a very low reported number of pupils over age in the elementary schools of the City of New York. (See Tables VII, VII', VII".)

3. Differences in reported per cent. of over-age pupils when different age-grade standards are used.

Table VII—Shows the Number and the Per Cent. of Pupils Under Age, Normal Age and Over Age, When an Age-Grade Report is Based on the Age-Grade Standards for Entering and for Completing Each of the Grades and When These Age-Grade Standards are Determined in View of Up-to-Fifteen as the Upper Normal Age Limit for Completing the Elementary School.

GRADES	Register as of June 30, After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1A.....	131	4	3.05	82	62.60	45	34.35
1B.....	394	129	32.74	203	51.52	62	15.74
2A.....	486	144	29.63	234	48.15	108	22.22
2B.....	418	73	17.47	216	51.67	129	30.86
3A.....	486	106	21.81	234	48.15	146	30.04
3B.....	452	81	17.92	197	43.58	174	38.50
4A.....	477	89	18.66	216	45.28	172	36.06
4B.....	457	73	15.97	168	36.76	216	47.27
5A.....	473	63	13.32	190	40.17	220	46.51
5B.....	416	45	10.82	138	33.17	233	56.01
6A.....	548	84	15.33	184	33.58	280	51.09
6B.....	462	59	12.77	141	30.52	262	56.71
7A.....	436	74	16.97	125	28.67	237	54.36
7B.....	577	80	13.86	189	32.76	308	53.38
8A.....	515	101	19.61	191	37.09	223	43.30
8B.....	400	68	17.00	147	36.75	185	46.25
Total.....	7,128	1,273	17.86	2,855	40.05	3,000	42.09

Table VII'—Shows the Number and the Per Cent. of Pupils Under Age, Normal Age and Over Age, When an Age-Grade Report is Based on the Age-Grade Standards for Entering and for Completing Each of the Grades, and When These Age-Grade Standards are Determined in View of Up-to-Fourteen and a Half as the Upper Normal Age Limit for Completing the Elementary School.

GRADES	Register on June 30 After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1A.....	131	4	3.05	50	38.17	77	58.78
1B.....	394	129	32.74	134	34.01	131	33.25
2A.....	486	144	29.63	162	33.33	180	37.04
2B.....	418	73	17.47	128	30.62	217	51.91
3A.....	486	106	21.81	126	25.93	254	52.26
3B.....	452	81	17.92	115	25.44	256	56.64
4A.....	477	89	18.66	105	22.01	283	59.33
4B.....	457	73	15.97	100	21.88	284	62.15
5A.....	473	63	13.32	99	20.93	311	65.75
5B.....	416	45	10.82	78	18.75	293	70.43
6A.....	548	84	15.33	91	16.61	373	68.06
6B.....	462	59	12.77	71	15.37	332	71.86
7A.....	436	74	16.97	45	10.32	317	72.71
7B.....	577	80	13.86	96	16.64	401	69.50
8A.....	515	101	19.61	78	15.15	336	65.24
8B.....	400	68	17.00	77	19.25	255	63.75
Total.....	7,128	1,273	17.86	1,555	21.81	4,300	60.33

Table VII"—Shows the Number and the Per Cent. of Pupils Under Age Normal Age and Over Age, When an Age-Grade Report is Based on the Age-Grade Standards for Being in the Grade, of the Several Years, When These Age-Grade Standards are Determined in View of Up-to-Fifteen as the Upper Normal Age Limit for Completing the Elementary School, and When the Age-Grade Report is Made After Promotion (as age-grade reports have been made by the City Superintendent of Schools since 1905).

GRADES	Register June 30 After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1st Year.....	525	17	3.24	476	90.67	32	6.09
2nd Year.....	904	147	16.26	663	73.34	94	10.40
3rd Year.....	938	122	13.01	662	70.57	154	16.42
4th Year.....	934	106	11.35	603	64.56	225	24.09
5th Year.....	889	73	8.21	549	61.76	267	30.03
6th Year.....	1,010	102	10.10	561	55.54	347	34.36
7th Year.....	1,013	108	10.66	578	57.06	327	32.28
8th Year.....	915	131	14.32	575	62.84	209	22.84
Total.....	7,128	806	11.31	4,667	65.47	1,655	23.22

Age-grade Table VII conforms in every respect to the age-grade reports as made by the City Superintendent of Schools, with two exceptions, the age-grade standards are for entering and for completing, and are for each of the several grades when up to fifteen is accepted as the upper normal age limit for completing the elementary school. Age-grade Table VII' conforms in every respect to the age-grade reports of the City Superintendent of Schools, with three exceptions, the age-grade standards are for entering and for completing, and are for each of the several grades, when these are determined in view of up to fourteen and a half as the upper normal age limit for completing the elementary school. Age-grade Table VII" conforms in every respect to the age-grade reports as made by the City Superintendent of Schools since 1905¹; the pupils are those on register June 30th; the ages are as of June 30th; the age-grade standards are those for being in the grades of the several years when determined in view of up to fifteen as the upper normal age limit for completing the elementary schools; and whether pupils are under age, normal age or over age is determined after promotion. In consequence age-grade Table VII shows for the five schools in question, the per cent. of pupils under age, normal age and over age, as it should be re-

¹ See Annual Report of the City Superintendent of Schools for 1905, pp. 58 ff.; and for 1911, pp. 53 ff.

ported when an age-grade report is based on the register as of June 30th, and when up to fifteen is accepted as the upper normal age limit for completing the elementary school. Table VII' shows for these same pupils and the same schools, the per cent. of pupils under age, normal age and over age, as should be reported, when up to fourteen and a half is accepted as the upper normal age limit for completing the elementary school. Age-grade Table VII'' shows for the same pupils, and for the same schools, the per cent. under age, normal age and over age as would be reported by the City Superintendent of Schools. (Up to fifteen is accepted as the upper normal age limit for completing the elementary school, by the City Superintendent of Schools.)

	PER CENT.		
	Under Age	Normal Age	Over Age
Table VII—Shows for the pupils and schools in question when under age, normal age and over age are correctly determined, and when up to fifteen is taken as the normal age to complete the elementary school.....	17.86	40.05	42.09
Table VII'—Shows for the same pupils and the same schools, when under age, normal age and over age are correctly determined and when up to fourteen and a half is taken as the normal age to complete the elementary school...	17.86	21.81	60.33
Table VII''—Shows for these same pupils and these same schools as would be reported by the City Superintendent of Schools, who takes up to fifteen as the normal age to complete the elementary school.....	11.31	65.47	23.22

The City Superintendent of Schools, by using the age-grade standards for "being in the grades" of the several years, and by making his age-grade reports as he does, records, therefore, in view of Table VII, 6.55 per cent. fewer pupils under age, 25.42 per cent. more pupils of normal age, and 18.87 per cent. fewer pupils over age than there probably are in the elementary schools of the City of New York, and in view of Table VII'', he reports 6.55 per cent. too few pupils under age, 43.66 per cent. too many pupils of normal age, and 37.11 per cent. too few pupils over age. These differences, varying according to whether up to fifteen or up to fourteen and a half is accepted as the upper normal age limit for completing the elementary school, are to be found in all the age-grade reports made by the City Superintendent of Schools for 1905 to 1911 inclusive.

III

When and How to Make Age-Grade Reports

Whether or not a pupil is under age, normal age or over age, can only be accurately determined, as we have seen, from the point of view either of the normal age limits for entering or of the normal age limits for completing each of the several grades. Accordingly, age-grade reports to be reliable and accurate must be made either at the end or at the beginning of a school term or school year.

1. Age-Grade Reports Made at the End of a School Term or Year. —The laws of most of the states, including the State of New York, require superintendents of schools to make an annual report for the official school year to the State Department of Education. With the recognition of their significance, over-age tables showing the ages and grades of pupils—the basis of age-grade reports—have been included in the annual report required of superintendents of schools by the educational departments of several states. Owing, at least partly, to the state requirement of an annual report for the official school year on the ages and grades of pupils, superintendents of schools make age-grade reports, as a rule, at the end of the year only.

When age-grade reports are made at the end of the year, to be included in the annual report for the official school year, such age-grade reports are based, almost always, on the age and grade, at the end of the year, of each and every different pupil that has been on the register during the course of the official year, of any one of the several schools of the system.¹ Such an age-grade report gives, therefore, for all the different pupils that have been on the register during the official year, the number, at the end of the year, under age, normal age or over age.

Indeed, the primary object of state authorities in requiring such age-grade reports and the primary object of superintendents of schools in making such reports is to gain definite information with respect to the number of pupils, at the end of the year, of the total or net register for the official year, under age, normal age and over age, to the end that definite data may be at hand on which to base such administrative policies and action that the number of over-age pupils may be reduced during the succeeding official school year.

A reliable and accurate age-grade report for the official school year for a system of schools having annual promotions, involves:

(1) That the age-grade report be made for each of the several grades.

(2) That the age-grade report for each grade be based on the total or net register of the grade for the official school year, that is, be based on the age of each and every different pupil on the register of the grade at the end of the year and on the age of each and every pupil—exclusive of pupils transferred or promoted—who has been on the

¹ Annual Report of the Schools of Cincinnati for 1911, p. 81.

register of the grade during the course of the year, but who has dropped from school either temporarily or permanently, and consequently not on the register of the grade at the end of the year.

(3) That the age-grade report be made after promotion and non-promotion, but before the grades and classes are reorganized for the new year, that is, both promoted and non-promoted pupils should be reported as of the register of the grade in which they have been during the whole or part of the official year, and in which they are registered at the end of the year before the reorganization of the grades and the classes for the new year.

(4) That whether promoted pupils are under age, normal age, or over age be determined in view of the normal age limit for completing the grade in which they have been registered a part or the whole of the year ending and hence in view of the normal age limits for completing the grade from which they are to be advanced.

(5) That whether non-promoted pupils are under age, normal age or over age be determined from the point of view of the normal age limits for completing the grade they last finished. Since non-promoted pupils are for all practical purposes just entering the grade from which they have failed to be advanced, whether non-promoted pupils are under age, normal age, or over age may be determined practically as well from the point of view of the normal age limits for entering the grade in which they have been registered during the whole or a part of the year ending, and from which they have failed to be promoted.¹

(6) That all pupils—exclusive of those transferred or promoted, who have been on the register of a given grade some time during the official year, but who have dropped from school either temporarily or permanently, hence are not on the register of the grade at the end of the year, be regarded as non-promoted pupils. Whether such pupils are under age, normal age, or over age is then determined in the same way as in the case of other non-promoted pupils. [See (5).] The age-grade report for promoted, for non-promoted pupils, and for pupils who have dropped from school either temporarily or permanently should be made separately in order to distinguish between the per cent. of under-age, normal age and over-age pupils, among promoted and non-promoted pupils and among pupils who have dropped out. These separate reports should then be combined to show the per cent. of under age, normal age and over age for the grades as a whole.

The foregoing considerations have to do, as stated, with the making, at the end of the year, of an age-grade report for the official school year, in a system of schools having annual promotions. In a system of schools having semi-annual promotions, such as in the City of New York,

¹ The probable error in determining non-promoted pupils from the point of view of the age-grade standards for entering the grade in which they have been registered during the whole or a part of the year, but from which they have just failed to be advanced, is only .028 of one per cent.

it is better not to attempt to make an age-grade report for the official year as a whole, but to make a separate age-grade report for each of the official terms. If this is done, the age-grade report for the official term is made in the same way as such a report for the official year. [See (1)-(6).]

If, however, in a system of schools having semi-annual promotions it is deemed desirable to make an age-grade report for the official year as a whole, the age-grade report for each of the grades should be made on the basis of the ages of all pupils on the register of the grade at the end of the year, and on the basis of the ages of all pupils, exclusive of those transferred or promoted, who have been on the register of the grade during the course of the official year, but who have dropped from school either temporarily or permanently, the report itself is made in the same way as in a system of schools having annual promotions. [See (1)-(6).]

2. Age-Grade Reports Made at the Beginning of the School Term or Year.—In contrast to age-grade reports made at the end of a term or year for the official year, the primary purpose of an age-grade report made at the beginning of a term or year is to give definite knowledge of the number of pupils actually in each class room and in each school of the system under age, normal age and over age, to the end that this information may be used by school officials, principals and teachers in properly classifying pupils, and in properly adapting the materials and methods of instruction to the varying abilities and needs of different groups of children. In a word, age-grade reports made at the end of a term or year shed light on age-grade conditions in the system as a whole and supply the basis of general administrative policies, such as making provision for special classes and providing different courses of instruction for over-age pupils; whereas, age-grade reports made at the beginning of the term or year place at the disposal of school officials, principals and teachers information which enables them so to apply their general administrative policies that the best interests of each child are conserved.

An age-grade report for the beginning of a term or school year to be most helpful to principals and teachers in classifying and carrying on the instruction of pupils should be made on the first day that schools open for instruction, or as soon as possible thereafter. Such a report should include all pupils who were in the particular class and grade who failed of promotion and all pupils who were promoted to the particular class and grade when the schools closed for instruction at the end of the preceding term or year. There should also be included in such a report all pupils who enter the particular classes and grades from time to time after the beginning of the term.¹ In a word, an age-

¹For a suggestive method of tabulating and exhibiting such an age-grade report for a given class, see card prepared by Dr. Horace L. Brittain of the Bureau of Municipal Research; also card prepared by Dr. Leonard Ayres of the Russell Sage Foundation.

grade report for the beginning of a term to be most helpful should show correctly the age-grade condition in the particular class. It also follows from the foregoing discussions that such an age-grade report to be reliable and accurate must be made from the point of view of the normal age limits for entering each of the several grades.

Where it is deemed desirable to make an age-grade report at the beginning of the term *for the system as a whole*, sufficient time, after the opening of the schools for instruction, must be permitted to elapse, at least one or two weeks, so that a large part, if not all of the pupils who are to be in school, are actually in attendance. Otherwise, the report will give but a partial view of the actual existing age-grade conditions.

3. When Age-Grade Reports Are Made by the City Superintendent of Schools.—The annual reports of the City Superintendent of Schools are for the official year beginning August 1st, and ending July 31st. The age-grade reports made by the City Superintendent of Schools appear in his annual reports. This being true, it would be expected that his age-grade reports would be for the official year, and give, by official terms or for the official year as a whole, the number of pupils of the total or net register under age, normal age and over age.

While this may have been the intention of the City Superintendent of Schools, an examination of his age-grade reports reveals the fact that they are neither for the official term, nor for the official year as a whole. Aside from the method employed in making them, the age-grade reports of the City Superintendent of Schools, instead of being based on the total or net register for the official year, as should be done when the report is for the official year [See (2), p. 613], are based on the register as of June 30th. Thus the tens of thousands¹ of pupils who have been on the register during the course of the official year, but who have dropped from school either temporarily or permanently, are entirely ignored; instead of his age-grade reports being made after pupils are promoted and non-promoted, but before the grades are reorganized for the new year [See (3), p. 614], they are made after the grades and classes are organized for the new year, hence, pupils are not reported from the grade in which they have been during the whole or a part of the year past, but from the grade they will be in at the beginning of the new year.² In consequence, the age-grade reports of the City Superintendent of Schools have but little of the value for administrative purposes, which belongs to age-grade reports made at the end of the year for the official year as a whole.

Notwithstanding the age-grade reports of the City Superintendent of Schools appear in his annual reports and for this reason the inference is that they have to do with the official year for which the

¹ See Promotion, Non-Promotion, and Part-Time, pp. 106-108.

² See Annual Report of the City Superintendent of Schools for 1905, pp. 58 ff.; and for 1911, pp. 53 ff.

annual report is made, his reports have certain of the characteristics of age-grade reports made at the beginning of a school term or year for the system as a whole. His age-grade reports, however, instead of being based on the ages and grades of the children on the register in the new year, as should be done when the report is for the beginning of the new term or year (see pp. 615-16), are based on the ages and grades of the children on register June 30th after promotion, and instead of his age-grade reports being made after the greater part, if not all of the pupils who will be in school during the new term or year are actually in attendance, they are made at the end of the preceding year when the schools are closed for instruction, hence no account is taken of the ages and grades of the army of pupils who will enter the elementary schools of the City of New York for the first time during the new term or year. In consequence, the age-grade reports of the City Superintendent of Schools have but little of the practical worth which belongs to age-grade reports made at the beginning of a school term or year, for the system as a whole, or of a current age-grade report made at the beginning of a term, for a particular class and grade.

The age-grade reports made annually by the City Superintendent of Schools since 1904 have, therefore, neither the value for administrative purposes belonging to age-grade reports made at the end of the year for the official year, nor the practical worth belonging to such reports made at the beginning of a new term or year, for neither do they supply definite information on the age-grade status in the system as a whole, nor do they supply definite information useful to principals and teachers in the classification and instruction of children.

IV

When to Take the Ages of Pupils

If the school term or the school year, i. e., the period during which the schools are open for instruction, began and ended on the same date as the official term or the official school year, there would be no question about when the ages of children should be taken in making age grade reports. But the official school year may begin August 1st, whereas the schools may not be open for instruction until September 1st; the schools may close for instruction June 30th, whereas the end of the official school year may not be until July 31st. This being so, confusion has arisen about the proper time to take the ages of children to be used as the basis of age-grade reports. In consequence, there is no consensus of opinion on when the ages of children should be taken, and there is little uniformity in the time they are taken: the time often varies within the same system of schools and within the same age-grade report.¹

¹ Annual Report of the Superintendent of Public Schools of City of Philadelphia for 1911, pp. 104 ff.

The time to take the ages of pupils depends on whether the age-grade report is for an official school year and made at the end of the year or is for the beginning of an official school year, and made at the beginning of the year.

1. Time to Take Ages When the Age-Grade Report is Made at the End of the Year, and for the Official School Year.—It should be obvious that when an age-grade report is to be made at the end of the school year for the official year as a whole, that the ages of the children cannot be taken as of the date of their first enrollment in the schools in the given official year.¹ Because, should the ages of the pupils taken in this way be used as the basis of such an age-grade report, the ages of all children would be lower from one to eleven months than the actual ages at the time the report was made. It is equally obvious that the ages of children cannot be taken as of the birthday occurring within the official school year for which the age-grade report is made.² Because to take the ages of children in this way would be to use as the basis of the age-grade report ages lower by from zero to twelve months than the actual ages of the children. Similarly, and for a like reason, it is incorrect to take the ages of children as of a specific date during the course of the official school year, e. g., December 8th.³

When an age-grade report is made at the end of the year for the official year as a whole, there are but two dates for taking the ages of pupils which need to be considered:

(a) The date at the end of the year when the schools close for instruction; and (b) the date of the close of the official school year.

The argument for taking the ages of children as of the date of the closing of the schools for instruction is that the real work of the schools is done when they close for instruction, hence this is the proper date on which to take the ages of children in judging of their progress through the schools.

The arguments for taking the ages of children as of the date of the close of the official school year are:

(1) The question of taking the ages of children as of the date of closing of the schools for instruction only arises when this date does not coincide with the date of the end of the official year. For example, in the City of New York, the schools close for instruction about June 30th, whereas the official school year ends July 31st.

(2) The end of the official year remains the same from year to year, whereas the date of the closing of the schools for instruction fluctuates; hence, to take the ages of the children as of the date of the close of the official year gives uniformity to the time of taking the ages

¹ See Report of Board of Education of the City of Chicago for 1911, pp. 147 ff.

² See Directions of the United States Bureau of Education for 1910-11.

³ Strayer: Age-grade Census of Schools and Colleges, p. 10; Annual Report of the City Superintendent of Public Schools of the City of Philadelphia for 1911, pp. 104 ff.

and gives a corresponding uniformity to the age-grade reports made on the basis thereof.

(3) The primary purpose of an age-grade report made at the end of the year is to show the actual age-grade status, at the end of the official school year, of all the different pupils who have been in the schools during the course of the official year; hence, to take the ages of the children as of a date other than of the close of the official year is to give the age-grade status as of that date and not as of the end of the official year, hence is to lose sight of the object of such an age-grade report.

(4) Finally, the normal length of time to complete each of the several grades is fixed and must necessarily be fixed, in school systems having semi-annual promotions on the basis of the calendar half-year (six months), and in school systems having annual promotions on the basis of the calendar year (twelve months). (See pp. 604-5.) The normal length of time to complete a grade (either six calendar months or a calendar year), together with the accepted normal age for completing the elementary school and the legal age of entrance, serve as the basis of determining the normal age limits for entering and for completing each of the several grades. The age-grade standards, in view of which under age, normal age and over age are judged, are, therefore, based on calendar units of a half year or a year.

In making age-grade reports, to take the ages of children as of the date of the closing of the schools for instruction at the end of the mid-year, or as of the date of the closing of the schools for instruction at the end of the year, is equivalent to making the actual length of time the schools are open for instruction during the term, or during the school year, the normal length of time for completing each of the several grades, hence, is to introduce a second, and, as a rule, a shorter measure of the normal length of time for completing each of the several grades, shorter by from one to two months, than the calendar unit of time employed in fixing the normal age limits for entering and for completing each of the several grades. Or, it is to use one unit of measure—a short one—in taking the ages of children, and a second unit of measure—a long one—in judging of whether or not they are under age, normal age, or over age. The result of which is to report too high the number of pupils under age and to report too low the number of pupils of normal age and over age. (See Tables VIII and VIII', pp. 621-22.)

For the foregoing reasons, when an age-grade report is made at the end of the year for the official year, the ages of the children should be taken as of the date of the close of the official school year.

2. Time to Take Ages When an Age-Grade Report is Made for the Beginning of the Year.—Confusion about when to take the ages of the children, when an age-grade report is made for the beginning of the year arises (a) from the fact that the date of the beginning of the official school year does not always coincide with the date of opening the

schools for instruction, and (b) from the fact that an age-grade report for the beginning of the year, to be reliable and accurate, must be made at the beginning and during the course of the term, or some time after the schools are opened for instruction. There are four possible dates on which the ages of the children may be taken in making an age-grade report for the beginning of the year; (a) the date of the beginning of the official school year; (b) the date of the opening of the schools for instruction; (c) the date on which the child enters school, and (d) the date on which the register is taken for the report, when made for the system as a whole.

An age-grade report for the beginning of the year and for a given class and grade should be made currently as children enter the given class, and when for the system as a whole, it should be made some time after the opening of the schools for instruction. To take the ages of the children as of the date of their first entrance to school or as of the date the register is taken for the report when for the system as a whole is, as a rule, to record ages from zero to one, two and three months older than if the ages were for the beginning of the official year. In an age-grade report for the beginning of a school term or year, under age, normal age and over age are determined in view of the normal age limits fixed for entering each of the several grades, and these age limits in turn date from the beginning of the official year. Hence, to take the ages of the children as of a date later than the date of the opening of the official school year, is to increase the reported number of over-age pupils. Ages as of the date of the entrance of pupils to school cannot therefore be used in a report at the beginning of the year for a given class and grade, nor can the ages as of the date the register is taken be used for such a report when for the system as a whole.

The remaining possible dates for taking the ages in making such an age-grade report at the beginning of the term or year are (a) the date of the beginning of the official school year, and (b) the date of the opening of the schools for instruction. The respective arguments for using each of these dates parallel the respective arguments given above for taking the ages of the children, in making an age-grade report at the end of the year, as of the date of the closing of the schools for instruction, and for taking the ages as of the date of the end of the official school year. Consequently, it is not necessary to repeat the arguments for taking the ages of the children, to be used as the basis of an age-grade report, for the beginning of the year, as of the date of the opening of schools for instruction, or to repeat those for taking the ages as of the date of the beginning of the official school year.

The primary purpose of an age-grade report for the beginning of the school year is, as we have seen (see p. 615), to supply definite knowledge of the number of pupils in each classroom and in each school under age, normal age and over age. In view of this purpose, there can be but one time for taking the ages of children to be used as the basis of such a report, viz.: the date of the beginning of the official school year.

3. When Ages Are Taken by the City Superintendent of Schools. —The ages of children used by the City Superintendent of Schools in making his age-grade report for the elementary schools for 1911, were taken as of June 28th, the date of the closing of the schools for instruction.¹

In making an age-grade report at the end of the year, to use as the basis thereof, the ages of children as of the date of the closing of the schools for instruction is, as we have seen (see p. 619), to use a short measure of the time to complete a grade—the length of time the schools are open for instruction, approximately ten months—and to use a long measure of the time to complete a grade—twelve months—when judging whether or not pupils are under age, normal age or over age. The effect is the same as when goods are bought on long measure and sold on short measure. Hence, for the City Superintendent of Schools to take the ages of children as of the date of the closing of the schools for instruction and to use these ages as the basis of his age-grade reports is for him to report the number of pupils under age too high and to report the number of pupils of normal age and over age too low.

Table VIII—Shows the Number and the Per Cent. of Pupils Under Age, Normal Age, and Over Age, When an Age-Grade Report is Made, as Made by the City Superintendent of Schools Since 1905, With the Ages of Pupils as of June 30th.

GRADES	Register as of June 30, After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1st Year.....	525	17	3.24	476	90.67	32	6.09
2nd Year.....	904	147	16.26	663	73.34	94	10.40
3rd Year.....	938	122	13.01	662	70.57	154	16.42
4th Year.....	934	106	11.35	603	64.56	225	24.09
5th Year.....	889	73	8.21	549	61.76	267	30.03
6th Year.....	1,010	102	10.10	561	55.54	347	34.36
7th Year.....	1,013	108	10.66	578	57.06	327	32.28
8th Year.....	915	131	14.32	575	62.84	209	22.84
Total.....	7,128	806	11.31	4,667	65.47	1,655	23.22

¹ Elementary School Circular No. 27, 1911-1912.

Table VIII'—Shows the Number and the Per Cent. of Pupils Under Age, Normal Age, and Over Age, When an Age-Grade Report is Made as Made by the City Superintendent of Schools Since 1905, With the Exception That the Ages of Pupils are as of July 31st.

GRADES	Register as of June 30, After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1st Year.....	525	13	2.48	473	90.09	39	7.43
2nd Year.....	904	97	10.73	699	77.32	108	11.95
3rd Year.....	938	87	9.28	677	72.17	174	18.55
4th Year.....	934	82	8.78	612	65.52	240	25.70
5th Year.....	889	54	6.07	554	62.32	281	31.61
6th Year.....	1,010	84	8.32	547	54.16	379	37.52
7th Year.....	1,013	85	8.39	573	56.57	355	35.04
8th Year.....	915	105	11.47	583	63.72	227	24.81
Total.....	7,128	607	8.52	4,718	66.19	1,803	25.29

Age-grade Table VIII conforms in every respect to the age-grade reports as made by the City Superintendent of Schools since 1905. Age-grade Table VIII' conforms in every respect to the age-grade reports as made by the City Superintendent of Schools since 1905, with one exception, the ages of the pupils are as of July 31st, the close of the official year. In consequence, Tables VIII and VIII' show the effect on the reported number of pupils under age, normal age and over age, of taking the ages of pupils as of June 30th, the usual date of the closing of the schools for instruction, instead of, as should be done, when the age-grade report is made at the end of the year, as of July 31st, the end of the official school year.

Table VIII shows for the five schools in question, that of the pupils on register after promotion 11.31 per cent. were under age, 65.47 per cent. were of normal age and 23.22 per cent. were over age. Table VIII' shows for the same schools and for the same pupils that 8.52 per cent. were under age, 66.19 per cent. were of normal age, and that 25.29 per cent. were over age. In a word, the City Superintendents of Schools, by taking the ages of pupils as of June 28th or June 30th, as the case may be, is able to report, in view of Tables VIII and VIII', 2.79 per cent. more pupils under age, .72 of 1 per cent. less pupils of normal age, and 2.07 per cent. less pupils over age, than he would probably be able to report were the ages of the children taken as they should be, when age-grade reports are made at the end of the year, viz.: as of the date of the close of the official school year.

V

How to Take the Ages of Pupils

But little less confusion exists with respect to how to take the ages of pupils than exists with respect to when to take their ages.

The basis of determining the ages of children, as of a given date, is the date of birth: year, month and day. In getting the date of birth—year, month and day—great care should be exercised. Under no condition should the teacher ask the pupils in her classroom the dates of their births and record these dates in her register to be used later in determining the ages of pupils. The date of birth—year, month and day—recorded in the teacher's register should in all cases be taken from the Pupil's Record Card.

In getting the date of birth—year, month and day—for the Pupil's Record Card, the parent should be made to go on record, and in all cases of doubt documentary evidence should be demanded, such, for example, as birth certificates. To repeat, too much care cannot be exercised in getting the exact date of birth, and this should be acquired once for all when the pupil enters school for the first time.

With the date of birth—year, month and day—as the basis, the age of a child as of the beginning or the end of the official school term or school year can be readily determined. For reasons which will appear later, the ages of children should always be computed in terms of years, months and days, thirty days being counted as a month.¹

The normal age limits for entering and for completing each of the several grades are fixed, it will be remembered (see pp. 604-7), in terms of years, months and days. For example, when up to fifteen is accepted as the upper normal age limit for completing the elementary school, the normal age limits for completing the 1A grade are from 6 years, 6 months and no days through 7 years, 5 months and 29 days inclusive; for the 1B, from 7 years no months and no days through 7 years, 11 months and 29 days inclusive, and so on. Accordingly, if pupils are to be grouped with accuracy on the basis of age, it is necessary to have their ages in years, months and days. When their ages are so taken, it is possible to group them with absolute accuracy according to the age limits fixed for entering or for completing each of the several grades.

¹In case pupils are born in the month of February, 28 days should be counted as a month.

VI

What Children to Include in Age-Grade Reports

1. *The Basis of the Question.*—A decade ago the elementary school was a simple institution, having as a rule one organization, one course of study, and one general classification of pupils. The present-day elementary school is a complex institution comprising a number of different schools, each having its own organization, its own course of study and caring for a distinct class of pupils. Within the present-day elementary school are included: (1) Regular classes, to which normal children are assigned; (2) rapid advancement classes, in which over-age pupils may do three terms of work in two terms; (3) E. Classes—classes for over-age and retarded pupils; (4) C. Classes—classes for non-English speaking pupils; (5) D. Classes—classes for over-age and retarded pupils seeking employment certificates; (6) defective speech classes—classes for children having speech defects; (7) classes for anemic children; (8) classes for tubercular children; (9) truant, probationary and parental schools; (10) classes for the blind; (11) classes for the deaf; (12) classes for crippled children; (13) ungraded classes—classes for mentally defective children; (14) trade-schools for boys; (15) trade-schools for girls, and, at times, still other classes for children having special needs and interests.

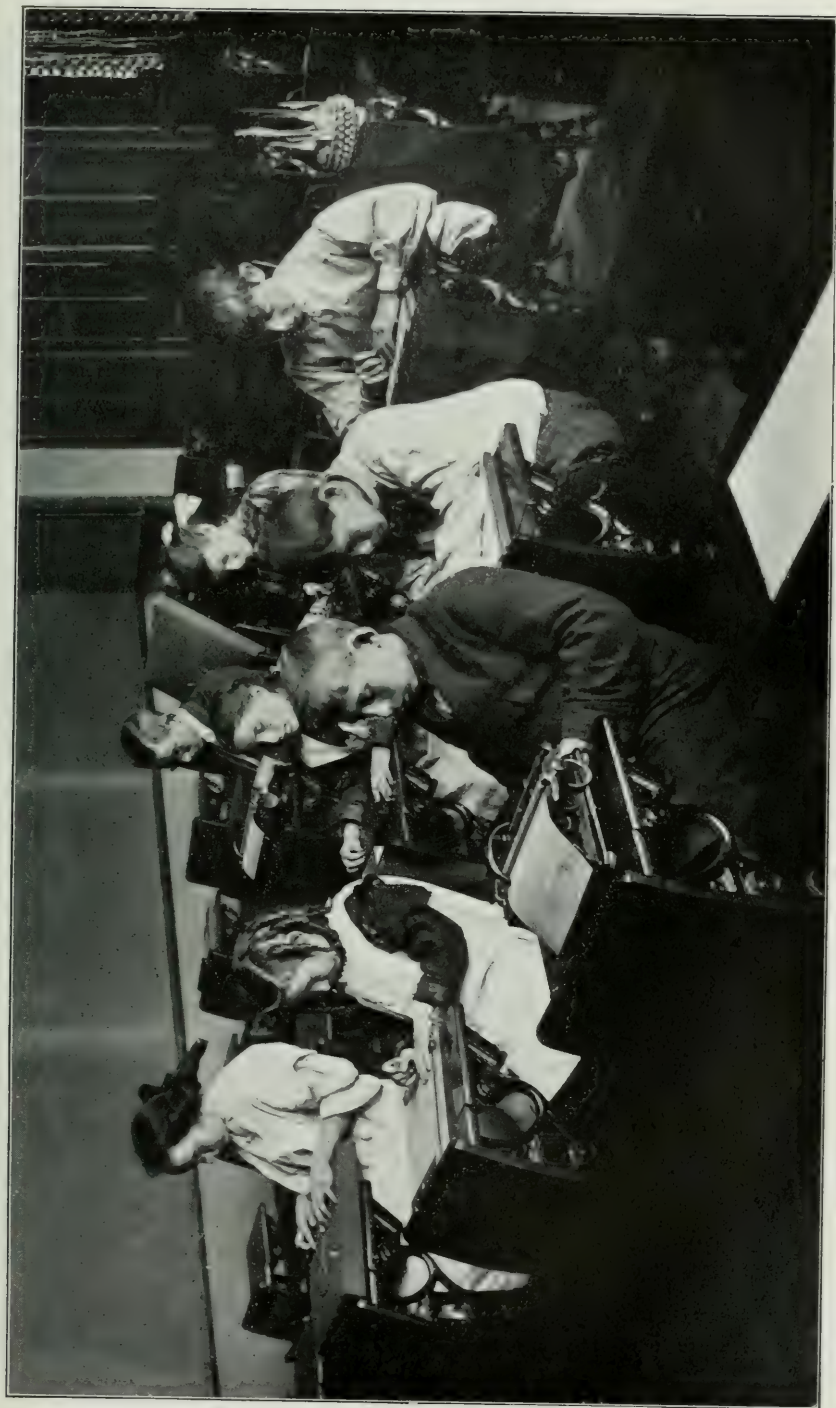
In view of the diversified activities and the complex organization of the present-day elementary school, the question arises: What pupils should be included in an age-grade report having as its purpose to give, at the end or at the beginning of the official school term or year, the number of under age, normal age and over-age children in the elementary schools?

2. *The Children to Include.*—In making an age-grade report in addition to having fixed normal age limits for entering and for completing each of the grades and having the ages of the children as of the date of the close or the beginning of the official school term or year, it is also necessary to have the children classified either as to completion or as to entrance to one or the other of the grades. Otherwise, it is impossible to determine whether or not pupils are under age, normal age or over age. Only those pupils, therefore, can be included in an age-grade report for the elementary schools who can be classified as having completed or as entering one or the other of the grades.

In classes for the blind, for the deaf, for crippled children, for mentally defective, for anemic and tubercular children, and in trade schools for boys and for girls, the grades of the elementary school are, as a rule, ignored. It is, therefore, impossible to classify with any degree of accuracy children in such classes as having completed or as entering one or the other of the grades, and, in consequence, it is impossible to



SCHOOL FOR THE DEAF, MANHATTAN.
Imitating Vibrations.



CLASS FOR THE BLIND IN PUBLIC SCHOOL 157, BROOKLYN.



CLASS FOR TUBERCULAR CHILDREN.
Annex of Public School 14, Manhattan.

include the children of such classes in the body of an age-grade report.¹

In rapid advancement classes, in E. classes, C. classes, D. classes, in defective speech classes, in truant, parental and probationary schools the instruction follows more or less along the lines of the regular elementary school course of study. In consequence, it is possible to classify the children in such classes with more or less accuracy according as they have completed or are entering one or the other of the grades. Hence, the children in such classes can be included.

While all pupils, except those in ungraded classes for physically and mentally defective children, and probably those in trade schools for boys and for girls,¹ should be included in an age-grade report for the elementary schools, it adds both to the clarity and to the value of such a report, if a separate report is made for each sex and for each distinct class of pupils; for example, a separate age-grade report for pupils in regular classes, for those in rapid advancement classes, for those in E classes and so on. These several and separate age-grade reports are then combined to show the total number of under age, normal age and over age pupils in the elementary schools, exclusive of those in ungraded classes¹ for physically and mentally defective children and those in trade schools.²

Finally, in view of the purpose of an age-grade report made at the end of the year for the official year, such an age-grade report should include not only all pupils, exclusive of those transferred or promoted, in the foregoing classes, on register at the close of the official year, but all pupils who have been on the register of these classes for a whole or a part of the official year, but who have dropped from school either temporarily or permanently, that is, age-grade reports made at the end of the year for the official year should be based on the total or net register (see pp. 613-15).

Whereas, when an age-grade report is made at the beginning of the year for a given class and grade, there should be included all pupils in the foregoing classes, exclusive of those transferred, who were in the given class during the whole or a part of the previous term or year, and who were not promoted, and all pupils promoted to the given class at the end of the previous year; there should also be included all pupils who have entered the given class for the first time during the given term; when such a report is made for the system as a whole, it should be based on the total or net register for such classes up to and including the day on which the register is taken for the report.

3. Children to be Included in Age-Grade Reports for the Elementary Schools of the City of New York.—In view of the foregoing discussion, there should be included in a complete and exact age-grade

¹ But the number of such children in each kind of special class and the ages of such children should be reported and incorporated in an age-grade report as a separate item. In case such pupils can be classified with reasonable accuracy on the basis of entrance or completion of one or the other of the several regular grades, they should, of course, be included in the body of the age-grade report under the heading of the respective kind of special class to which they belong.

² For a good example of such separate age-reports, see *Annual Report of the Superintendent of Public Schools of the City of Philadelphia for 1911*, pp. 104 ff.

reports for the elementary schools of the City of New York, both when the report is for the official year, and when the report is for the beginning of the term or year, at least the pupils in the following classes:

- (1) In the regular classes of each of the several grades;
- (2) In rapid advancement classes;
- (3) In E classes;
- (4) In C classes;
- (5) In D classes;
- (6) In defective speech classes, and
- (7) In truant, parental, and probationary schools.

4. Children Included in Age-Grade Reports Made for the Elementary Schools of the City of New York.—In making his age-grade reports for 1904 and for 1905, there were included by the City Superintendent of Schools all the different children on register June 30th, but he did not include in these reports all the different children, exclusive of those transferred or promoted, who were on the register during the course of the official school year. While there were, therefore, included in the age-grade reports for 1904 and for 1905, children—a few hundred—who should have been excluded, viz.: pupils in classes for mentally defective children,¹ there were omitted from these reports the tens of thousands of children who dropped from schools temporarily or permanently during the course of the official year, and who were not on the register June 30th.

In his Annual Report for 1905 the City Superintendent of Schools announces what pupils are to be excluded thereafter from his age-grade reports, viz.: "pupils in special classes (classes to teach English to immigrant children) and ungraded classes (classes for defective or atypical children)." As a matter of fact, the foregoing children—a total of 2115—were not only excluded from his age-grade report for 1906, but there were also excluded some 17,544 pupils on register in the newly formed Special D and E classes.² In a word, the age-grade report of the City Superintendent of Schools for 1906 included only the pupils on the register at the end of the year when the schools closed for instruction, in the regular classes of the several grades,³ and this is true of all his later age-grade reports.⁴ In consequence, the age-grade reports of the City Superintendent of Schools, since 1905, are not age-grade reports for the elementary schools as a whole, but merely age-grade reports for the regular classes of the several grades, and, by reason of taking no account whatever of the tens of thousands of pupils who drop from the regular classes during the course of the official year, they are but partial and incomplete reports even for the pupils in the regular classes.

¹ Annual Report of the City Superintendent of Schools for 1905, p. 63.

² Annual Report of the City Superintendent of Schools for 1906, pp. 57-58.

³ Annual Report of the City Superintendent of Schools for 1906, p. 57.

⁴ See Annual Report of the City Superintendent of Schools for 1907, p. 58; and for 1911, p. 54.



CLASS FOR ANÆMIC CHILDREN.
On roof-playground, Public School 21, Manhattan.



CRIPPLED CHILDREN.
Graduating Class in Annex to Public School 2, Manhattan.



Table IX—Shows the Number and Per Cent. of Pupils Under Age, Normal Age, and Over Age, When Up to Fifteen is Accepted as the Upper Normal Age Limit for Completing the Elementary School, and When an Age-Grade Report is Correctly Made, in a System of Schools Having Semi-Annual Promotions, at the End of a Term for the Official Term.¹

GRADES	Net or Total Register for 2nd Official Term 1911	UNDER AGE		NORMAL AGE		OVER AGE		
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age	
REGULAR CLASSES	1A.....	517	90	17.41	315	60.93	112	21.66
	1B.....	487	95	19.51	280	57.49	112	23.00
	2A.....	436	50	11.47	235	53.90	151	34.63
	2B.....	524	74	14.12	272	51.91	178	33.97
	3A.....	463	60	12.96	203	43.84	200	43.20
	3B.....	488	70	14.34	228	46.72	190	38.93
	4A.....	468	63	13.46	166	35.47	239	51.07
	4B.....	498	46	9.24	205	41.16	247	49.60
	5A.....	441	31	7.03	146	33.11	264	59.86
	5B.....	557	72	12.93	188	33.75	297	53.32
	6A.....	491	48	9.78	131	26.68	312	63.54
	6B.....	466	61	13.09	141	30.26	264	56.65
	7A.....	658	73	11.09	172	26.14	413	62.77
	7B.....	588	82	13.95	191	32.48	315	53.57
	8A.....	483	60	12.42	157	32.51	266	55.07
	8B.....	388	76	19.59	141	36.34	171	44.07
Total.....	7,953	1,051	13.22	3,171	39.87	3,731	46.91	
C, D, AND E CLASSES	1A.....	6	.....	.....	.....	6	100.00	
	1B.....	2	.....	.....	.....	2	100.00	
	2A.....	5	.....	.....	.....	5	100.00	
	2B.....	16	.....	.....	.....	16	100.00	
	3A.....	20	.....	.....	.....	20	100.00	
	3B.....	23	.....	.....	.....	23	100.00	
	4A.....	40	.....	1	2.50	39	97.50	
	4B.....	48	1	2.08	4.17	45	93.75	
	5A.....	77	1	1.30	.....	76	98.70	
	5B.....	24	2	8.33	1	4.17	21	87.50
	6A.....	23	1	4.35	2	8.70	20	86.95
	6B.....	9	.....	.....	.....	9	100.00	
	7A.....	3	.....	.....	.....	3	100.00	
Total.....	296	5	1.69	6	2.03	285	96.28	
Grand Total	8,249	1,056	12.80	3,177	38.51	4,016	48.69	

¹ See note 1, p. 598.

Table IX'—Shows the Number and Per Cent. of Pupils Under Age, Normal Age and Over Age, When Up to Fourteen and a Half is Accepted as the Upper Normal Age Limit for Completing the Elementary Schools, and When an Age-Grade Report is Correctly Made, in a System of Schools Having Semi-Annual Promotions, at the End of a Term for the Official Term.¹

GRADES	Net or Total Register for 2nd Official Term 1911	UNDER AGE		NORMAL AGE		OVER AGE		
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age	
REGULAR CLASSES	1A.....	517	90	17.41	199	38.49	228	44.10
	1B.....	487	95	19.51	194	39.83	198	40.66
	2A.....	436	50	11.47	133	30.50	253	58.03
	2B.....	524	74	14.12	153	29.20	297	56.68
	3A.....	463	60	12.96	120	25.92	283	61.12
	3B.....	488	70	14.34	115	23.57	303	62.09
	4A.....	468	63	13.46	92	19.66	313	66.88
	4B.....	498	46	9.24	104	20.88	348	69.88
	5A.....	441	31	7.03	80	18.14	330	74.83
	5B.....	557	72	12.93	86	15.44	399	71.63
	6A.....	491	48	9.78	67	13.64	376	76.58
	6B.....	466	61	13.09	50	10.73	355	76.18
	7A.....	658	73	11.09	84	12.77	501	76.14
	7B.....	588	82	13.95	83	14.11	423	71.94
	8A.....	483	60	12.42	75	15.53	348	72.05
	8B.....	388	76	19.59	64	16.49	248	63.92
	Total..	7,953	1,051	13.22	1,699	21.36	5,203	65.42
C, D and E CLASSES	1A.....	6	.....	.....	.....	6	100.00	
	1B.....	2	.....	.....	.....	2	100.00	
	2A.....	5	.....	.....	.....	5	100.00	
	2B.....	16	.....	.....	.....	16	100.00	
	3A.....	20	.....	.....	.....	20	100.00	
	3B.....	23	.....	.....	.....	23	100.00	
	4A.....	40	.....	.....	.....	40	100.00	
	4B.....	48	1	2.08	1	2.08	46	95.84
	5A.....	77	1	1.30	.....	76	98.70	
	5B.....	24	2	8.33	1	4.17	21	87.50
	6A.....	23	1	4.35	1	4.35	21	91.30
	6B.....	9	.....	.....	.....	9	100.00	
7A.....	3	.....	.....	.....	3	100.00		
Total..	296	5	1.69	3	1.01	288	97.30	
Grand Total	8,249	1,056	12.80	1,702	20.63	5,491	66.57	

¹ See note, p. 598.

Table IX''—Shows the Number and Per Cent. of Pupils Under Age, Normal Age, and Over Age, When an Age-Grade Report is Made as Age-Grade Reports are Made by the City Superintendent of Schools.¹

GRADES	Register as of June 30 After Promotion	UNDER AGE		NORMAL AGE		OVER AGE	
		Number Under Age	Per Cent. of Register Under Age	Number Normal Age	Per Cent. of Register Normal Age	Number Over Age	Per Cent. of Register Over Age
1st Year.....	525	17	3.24	476	90.67	32	6.09
2nd Year.....	904	147	16.26	663	73.34	94	10.40
3rd Year.....	938	122	13.01	662	70.57	154	16.42
4th Year.....	934	106	11.35	603	64.56	225	24.09
5th Year.....	889	73	8.21	549	61.76	267	30.03
6th Year.....	1,010	102	10.10	561	55.54	347	34.36
7th Year.....	1,013	108	10.66	578	57.06	327	32.28
8th Year.....	915	131	14.32	575	62.84	209	22.84
Total.....	7,128	806	11.31	4,667	65.47	1,655	23.22

Age-grade Table IX is made as an age-grade table should probably be made for the elementary schools of the City of New York, if up to fifteen is accepted as the upper normal age limit for completing the elementary school. Age-grade Table IX' is made as an age-grade report should probably be made for the elementary schools of the City of New York, if up to fourteen and a half is accepted as the upper normal age limit for completing the elementary school. Age-grade Table IX'' conforms in every respect to the age-grade reports as made by the City Superintendent of Schools since 1905. Age-grade Tables IX, IX' and IX'' show, therefore, the effect of the City Superintendent of Schools making his age-grade reports as he does, on the reported number of pupils under age, normal age and over age.

The City Superintendent of Schools by limiting his age-grade reports to the regular classes of the several grades, by including in his reports only the pupils on the register in these classes at the end of the term, and by making his age-grade reports as he does, reports, in view of Table IX, for regular classes, 1.91 per cent. fewer pupils under age, 25.60 per cent. more pupils of normal age and 23.69 per cent. fewer pupils over age, than there probably are in the regular classes of the several grades; while, if his reports are taken as age-grade reports for the elementary schools as a whole, he reports, in view of Table IX, 1.49 per cent. fewer under age pupils, 29.96 per cent. more pupils of normal age, and 25.47 per cent. fewer pupils over age than there probably are in the elementary schools. Whereas, in view of Table IX', he reports 1.91 per cent. fewer pupils under age, 44.11 per cent. more pupils of

¹ See note, p. 598.

normal age and 42.20 per cent. fewer pupils over age than there probably are in the regular classes of the several grades, and if his reports are taken as age-grade reports for the elementary schools as a whole, he reports in view of Table IX' 1.40 per cent. fewer pupils under age, 44.84 per cent. more pupils of normal age and 43.35 per cent. fewer pupils over age, than there probably are in the elementary schools of the city.

Only by including in his age-grade report the children that he does, and by making his age-grade reports as he does, was the City Superintendent of Schools able in 1911 to report as follows:

"That the decrease in the number of over-age children in the grades has been steady and progressive since 1904, when I first called the attention of the world to this over-age problem, is shown by the following table:

Table XXXII—Showing the Number of Over-Age Children in the Grades Since 1905

YEAR	Number of Over-Age Pupils	Per Cent. of Whole Number
1905.....	160,549	32.0
1906.....	150,500	30.1
1907.....	158,466	30.4
1908.....	161,373	30.0
1909.....	156,208	28.4
1910.....	146,326	26.1
1911.....	131,858	23.3 "1

It is possible for the City Superintendent of Schools, making his age-grade reports as he does, to report a reduction of over-age pupils "in the grades" from 32 per cent.² in 1905 to 23.3 per cent. in 1911, a reduction of 8.78 per cent. But the City Superintendent of Schools failed to point out in connection with "Table XXXII" that the per cent. of over-age pupils "in the grades" was only for those pupils on register "in the grades" June 30th when the schools closed for instruction, and that no account whatever had been taken of the tens on tens of thousands of pupils who had been "in the grades" during the course of the official

¹ Annual Report of the City Superintendent of Schools, for 1911, p. 59.

² It should be noted in this connection that the per cent. of over-age pupils in the regular classes of the grades was not 32 per cent. as given in Table XXXII, but that 32 per cent. is probably the per cent. of over-age pupils in the elementary schools as a whole, because in this age-grade report pupils in certain special classes were included. See Annual Report of the City Superintendent of Schools for 1904, p. 43.

year, but who had dropped from school temporarily or permanently.¹ He failed to point out the fact that the number of pupils taken from the regular classes of the several grades and put into special C, D, and E classes had increased from a few hundred in 1905 to 28,838 in 1911.² Naturally, when tens on tens of thousands of pupils—all presumably over age—are taken from the regular classes in the grades and entirely ignored in an age-grade report, the per cent. of over age in the grades is reduced. By the same mechanical methods the per cent. of over-age pupils in the grades could be reduced to zero.

Until an exact and complete age-grade report is made no one will know what the actual age-grade conditions are in the elementary schools of the city; until such a report is made, it is impossible to judge whether the schools are efficiently or inefficiently administered, to judge whether or not the materials and methods of instruction are adapted to the varying abilities and needs of different groups of children, or to determine the number of pupils for whom special classes should be provided. This much, however, is clear, the age-grade reports of the City Superintendent of Schools are not only incomplete and inexact for the grades, but shed little light on the age-grade conditions in the elementary schools as a whole.

VII

Conclusions and Recommendations

The foregoing discussion may be summarized as follows:

I. Conclusions.—(1) Over age has social, educational, and financial significance, because:

(a) Over-age children tend to fail to complete the work of the elementary schools, just to the extent that they fall behind their grade for their age.

(b) Over-age children, by tens on tens of thousands, falling behind the grade for their age, enter practical pursuits with only a sixth or seventh grade education.

(c) To provide special classes for the instruction of over-age pupils as is now done, increases the cost of instructing such pupils, and the presence of a large number of over-age pupils in a system of schools increases the number of classrooms, and, hence, the number of buildings needed to care for a given school population.

(2) Age-grade standards for "being in the grade" are a wrong basis for age-grade reports, because:

¹ 30,995 pupils dropped temporarily or permanently from the elementary schools of the city during the course of the February-June term of 1911. See Report on Promotion, Non-Promotion, and Part-Time, p. 108.

² Annual Report of the City Superintendent of Schools for 1911, p. 55.

(a) A child is not under age, normal age, or over age by reason of being of a certain age and by reason of "being in a certain grade." A child is under age, normal age, or over age in view of the task in hand, viz.: completing the entire elementary school course of study by a given age.

(b) To make age-grade reports on the basis of age-grade standards for "being in the grade" is to *decrease* decidedly the reported number of over-age children.

(3) Whether or not a child is under age, normal age, or over age, can be determined exactly only in view of the normal age limits fixed for entering, and for completing each of the several grades of the elementary school.

(4) The age-grade standards for entering and for completing each of the several grades of the elementary school will differ according to whether up to fifteen years of age or up to fourteen and a half years of age is accepted as the upper normal age limit for completing the elementary school.

(5) Age-grade reports are most reliable and exact when made on the basis of age-grade standards for entering and for completing each of the several grades of the elementary school, and when these age-grade standards are determined in view of up to fourteen years and a half as the upper normal age limit for completing the elementary school.

(6) Age-grade reports to be valuable as a means of guidance to the Board of Education and to administrative officers should be made at the end of the year for the official school year as a whole. Age-grade reports to be valuable to principals and teachers in the proper classification and instruction of pupils should be made at the beginning of the school term or year.

(7) When an age-grade report is made at the end of the year for the official year as a whole, the ages of the children should be taken as of the date of the close of the official school year. When an age-grade report is made at the beginning of the school term or year, the ages of the children should be taken as of the date of the beginning of the official school year.

(8) In making age-grade reports the ages of the children should be based on the date of birth—year, month and day—and taken in terms of years, months and days.

(9) There should be included in an age-grade report for the elementary school, all children who can be classified with reasonable accuracy as having completed or as entering one or the other of the several grades of the elementary school. The only pupils in the elementary school who probably cannot be included in such a report are those in ungraded classes for physically and mentally defective pupils and those in trade-schools.

(10) Age-grade reports, whether made at the end of the year, for the official year, or made at the beginning of the year, for a given class

of a given grade, or for the system as a whole, should be based on the **total or net register**.

(11) The age-grade reports of the City Superintendent of Schools of the City of New York are of but little value for purposes of information, administration and instruction, because:

(a) His age-grade reports are based on age-grade standards for "being in the grade."

(b) His age-grade reports are made for the grades of the several years instead of for each of the several grades, and after the grades and classes are reorganized for the new year.

(c) Up to fifteen, instead of up to fourteen years and a half is accepted as the upper normal age limit for completing the elementary school.

(d) His age-grade reports have neither the value belonging to age-grade reports for the official school year, nor the worth belonging to such reports made at the beginning of the year, for neither do they supply definite information on the age-grade status in the system as a whole, nor do they supply information useful to principals and teachers in the classification and instruction of children.

(e) The ages of the children used in his age-grade reports are as of the date the schools are closed at the end of the year for instruction, instead of as of the date of the close of the official year.

(f) His age-grade reports have to do only with the children on register at the end of the year in the regular classes of the grades, hence are not age-grade reports for the elementary schools as a whole, but for the regular classes of the grades only. By reason of taking no account whatever of the tens on tens of thousands of pupils who drop from the regular classes during the course of the official year, they are partial and incomplete reports even for the pupils in the regular classes. By reason of the City Superintendent taking tens on tens of thousands of pupils from the regular classes of the grades, and putting them in special classes, and by reason of ignoring these pupils, all of whom are presumably over age, his age-grade reports shed little light on the age-grade conditions in the elementary schools as a whole. Hence, the age-grade reports of the City Superintendent of Schools are incomplete and inexact both for the grades and for the elementary schools as a whole.

2. Recommendations.—In view of the foregoing conclusions we recommend:

(1) That the methods employed by the City Superintendent of Schools in making age-grade reports be abandoned.

(2) That an age-grade report be made at the end of the year for the official school year as a whole, to supply the Board of Education and its administrative officers with the basic information needed for their guidance.

(3) That an age-grade report be made at the beginning of the year to supply principals and teachers with the facts upon which they

may rely in making classification and in carrying on the instruction of pupils; that these reports be for the several classes of each school and for each school, but not for the system as a whole.

(4) That up to fourteen years and a half be accepted as the upper normal age limit for completing the elementary school.

(5) That age-grade reports be made according to the provisions of this report.

(6) We would also recommend:

(a) That data be collected at once by the Board of Education on the ages and grades of children; that complete and exact information may be had with respect to the age-grade condition in the elementary schools of the City;

(b) That data be collected at once on the causes of over age in the elementary schools, and

(c) That an immediate investigation be made of to what extent pupils now in special classes are classified and are instructed in view of the causes of their being over age.

LOCATION, DESIGN AND CONSTRUCTION

REPORT ON

NEW YORK PUBLIC SCHOOLS
DELAYS IN THEIR LOCATION,
DESIGN AND CONSTRUCTION

REMEDIES SUGGESTED

SECTION I.—REPORT IN BRIEF

SECTION II.—REPORT IN DETAIL

SECTION III.—(a) DETAILED ILLUSTRATIVE DATA

(b) CHARTS AND EXHIBITS

CHARLES G. ARMSTRONG

FRANCIS J. ARMSTRONG

Consulting Engineers

CITY OF NEW YORK
1911-1913

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REPORT ON
NEW YORK PUBLIC SCHOOLS

DELAYS IN THEIR LOCATION, DESIGN
AND CONSTRUCTION

REMEDIES SUGGESTED

SECTION I
REPORT IN BRIEF

CHARLES G. ARMSTRONG,
FRANCIS J. ARMSTRONG,
Consulting Engineers.

CITY OF NEW YORK
1911-1912

SECTION I—THE REPORT IN BRIEF

Assignment

- A—To investigate the progress of public school construction from the selection of site to completion or present date and to locate avoidable delays therein.
- B—To offer constructive recommendations so as to improve conditions and facilitate New York public school construction.

Findings

"A"

- 1—The selection of public school sites is not founded upon a scientific basis. The location of a site is determined by local request and speculation, rather than by scientific census calculations assisted by local surveys.
- 2—There is unnecessary loss of time in departmental approval of work not pertaining to that department.
- 3—Time is lost in design, in approval of contract and in construction because the general construction, heating, ventilating, plumbing, drainage, electrical and furniture plans and specifications are submitted to the various City Departments separately through long intervals of time instead of simultaneously. (See Chart No. 2.)
- 4—Much time and financial loss is occasioned by the too frequent use of new designs for school buildings.
- 5—Time is lost in "useless formalities" throughout the City Departments, due to lack of proper and definite information as to the requirements of that department.

- 6—There are resultant delays and loss of efficiency because of unscientific mechanical designs. (See former report on Condition and Efficiency of the Public Schools of the City of New York, Pages 17-19.)
- 7—There are delays in construction, the best grade of work is not secured and financial losses to the City are caused by the apparent necessity of selecting the lowest bidder practically regardless of experience or integrity.
- 8—Extra school building construction, expense and delays are caused by lack of economy in use of present buildings. (See Chart No. 4.)

There is little doubt that the Board of Education should have full power to deal with its work in an effective business-like manner; yet up to the present time, as shown herein and in former report on "Condition and Efficiency of the Public Schools of the City of New York," it has not proven itself competent to exercise even such powers unreviewed by other City Departments.

It is, and has been, entirely within the powers of the Board of Education alone, to eliminate items Nos. 1, 3, 4, 5, 6, and 8, and thereby secure far better results with less expense to the City than has obtained up to the present time.

CONSTRUCTIVE SUGGESTIONS AND RECOMMENDATIONS

"B"

1—Select sites for new schools upon data obtained from accurate census calculations and local surveys. There is at present a Permanent Census Bureau whose records should show at all times the most desirable locations for school buildings, based upon present and prospective school population, as well as existing and future transportation facilities.

The Board of Education should purchase sites and build schools only upon such information. This information should be of such character that the school seating requirements would be known at least two years in advance.

2—There should be established by changes in Charter if necessary, a staff in the Efficiency Bureau of the Board of Estimate and Apportionment whose duties shall be to pass upon the mechanical and architectural adequacy of all building plans of all departments of the City.

The effect of this staff would be to insure economy, efficiency and adequacy in all power plants and buildings constructed by the City's money.

3—The Board of Education should design and submit for approval all plans of any one school in one unit. That is, general construction, heating and ventilating, and electrical plans should be designed in correlation and submitted for approval together, in order that those whose duties are to so approve will be enabled to consider the building as a whole, and, further, in order that during construction and during ultimate operation the best and most economical results will be obtained. (See Chart No. 2.)

4—The Board of Education should complete its partial standards of school buildings and evolve an absolutely standard set of school building designs for elementary schools. (See Plates A, B, and C.) These standards should be of sufficient variety to conform to the architectural requirements of the locality and to render the ultimate New York public schools as perfect in mechanical, educational, and architectural details as modern knowledge renders possible.

5—Much time lost in "useless formalities" and unnecessary work in approval of plans by City departments, foreign to the Board of Education, can be eliminated by the adoption of recommendations 3 and 4. It is recommended that all City departments, wherein approval of plans of other departments is required, should issue a complete set of rules and regulations clearly outlining the requirements of such department.*

6—The Board of Education should retain as an adjunct to its designing force, and as a necessity contingent upon the establishment of a perfect and standard school design, an engineer of as well-established ability as its architect, whose duties should be to assume full and responsible charge of the mechanical design of school buildings and maintenance of same.

"Mechanical design" is a well-defined and distinct division of building construction, and of far greater importance to taxpayers than the architectural design, as it more directly influences operating cost.**

7—There should be established and incorporated in the City charter a Board of Censorship for Contractors, the duties of which should be to make public and maintain a list of contractors whose intelligence, experience, integrity, and financial ability shall render them eligible for City work.

No contract performed with the City finances should be exempt from this censorship.

8—It is recommended that the Board of Education give serious consideration to a plan for using for educational purposes the present elementary school buildings to their utmost capacity, including the con-

*Municipal Art Commission should be exempt from this ruling.

**See Report on Condition and Efficiency of School Buildings of New York, pages 17-19.

stant use of auditoriums. Present unused spaces, or spaces occupied by useless or improperly placed machinery should be used for educational purposes. The schools should be used in regular sessions the year around (see Chart No. 4 for possible calendar), and thus impose upon the buildings that which is known in engineering as an increased "load factor."

Any one class should attend school in regular session, three terms per year, the fourth being for vacation period. The selection of terms by the pupils or their parents should be subject to the control of the school principal, but under the jurisdiction of the district superintending official. ("Children and teachers need vacations, the buildings are better off without.")

Conclusions

Estimated savings in time by adoption of recommendations Nos. 1 to 7 inc.....From 2 to 8 years per school building

Estimated financial saving by adoption of recommendations Nos. 1 to 7 inc.\$1,200,000 per year

(See detailed report for method of estimation.)

The above recommendations can all be put into effect immediately, and the great savings estimated herein obtained without cost to the City. This can be accomplished by simply reorganizing the present force and rearranging the present conditions.

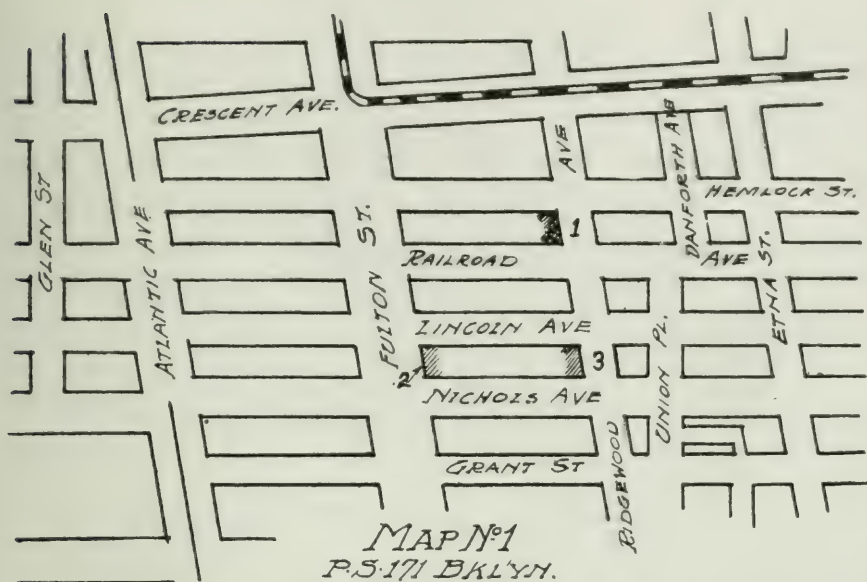
Respectfully submitted,

CHARLES G. ARMSTRONG,

FRANCIS J. ARMSTRONG,

Consulting Engineers.

May 21, 1913.



MAP No 1
P.S. 171 BKLYN.

RIDGEWOOD & NICHOLS AVE.

DIAGRAM REPRESENTS CHANGES OF SITE FOR THIS SCHOOL
SEE DETAILED DATA & P.S. 171 B.K.

BKLYN SCHOOL Bd RECOMMENDED SITE. 1
CITY Supt. RECOMMENDED SITE. 1
COMMITTEE ON SITES ORDERED SITE 1 ON SPECIAL LIST & SITES.
COMMITTEE ON SITES RECOMMENDED SELECTION OF SITE 1
Bd & Ed. SELECTED SITE. 1
COMMITTEE ON SITES RECOMMENDED THAT Bd & Ed.
RESCIND ABOVE & SELECT. SITE 2
COMMITTEE ON SITES RESCINDED ABOVE & SELECTED. 3
CITY Supt. RECOMMENDED SITE 1
Bd & Ed. RESCINDED ACTION & OCT. 24. 1906 & SELECTED. 3
CITY Supt. RECOMMENDED SITE 3, TWO MONTHS
AFTER SELECTION
TITLE VESTED.
SCHOOL COMPLETED & OPENED.

March 17 1902
Feb. 21 1905
Feb. 1 1906
June 7 1906
Oct. 24 1906

Nov. 6 1907
July 7 1908
Dec. 14 1908
Feb. 10 1909

June 21 1909
Sept. 1912

REPORT ON PUBLIC SCHOOLS, N. Y.

Chas. G. Armstrong & Son

Feb. 1, 1913.

MAP NO. 1.—This map with the accompanying data indicates confusion of recommendations because of the failure of the Board to begin initial proceedings on the basis of scientific and exact information.

CHART I
Public School #61 - Manhattan.

The taller pyramid represents time spent in all steps of site selection, building design, and approval of plans and specifications for general construction. Time spent upon approval of heating and ventilating and electric plans as shown on Chart #2.

Art Commission 7 days
Bureau of Buildings 20 days
Dept. of W.S.C.&E. 13 days
Department of Finance. 30 days
Dept. of Highways 17 days
(See detail P.S.#61 M.) 27 days
Due to Bd. of Ed. 90 days
Used by Bd. of Ed. during approval.

17 months
Approximate time spent in construction.

23.5 months
Time spent between vesting of title and completion of preliminary plans.

57 months
Time between initiation and vesting of title.
(2.5 years of this time were used by Bd. of Ed. in determining proper location.)

Design 1 month
3 months
Approval of plans.
8 months for purchase of site.
12 months
Time allowed for construction.

Smaller pyramid represents time in which the building should have been completed if all recommendations herein were adopted.

Report on New York Public Schools, No. 4. Charles G. Armstrong & Son.—May 21, 1913.

CHART II

PUBLIC SCHOOL No. 61—MANHATTAN

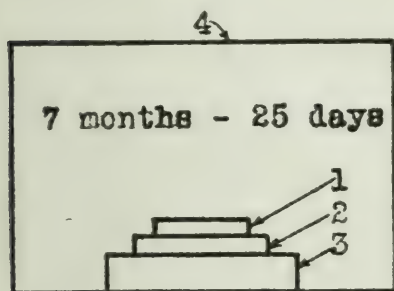
In every action of a City department there is a certain amount of "red-tape." This represents a large percentage of the time required for approval. If several sets of plans dealing with the same building are separately submitted for approval, this "red-tape" period is multiplied by the number of sets of plans.

All plans submitted together would take practically the same time for approval as any one set separately. Therefore, time spent on other plans after completion of general construction is a loss to the City and chargeable to the designers.

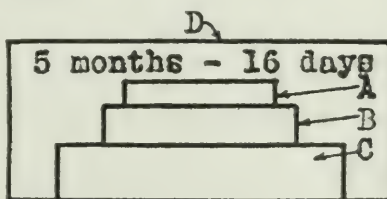
Pyramid No. 1 illustrates time spent on heating and ventilating plans by the various departments after the general construction plans were completed.

Pyramid No. 2 illustrates time spent on electrical plans by the various departments after the completion of heating and ventilating plans.

The total time to completion after that of the previous plans is chargeable to the Board of Education, and is represented in both cases by the pyramid enclosure.



A—Dept. of W. S. G. & E., 46 days.
 B—Time allotted for printing, 20 days.
 C—Dept. of Finance, 11 days.
 D—Total.



1—Department of Finance, 5 days.

2—Board of Estimate and Apportionment, 7 days.

3—Time allotted for printing, 20 days.

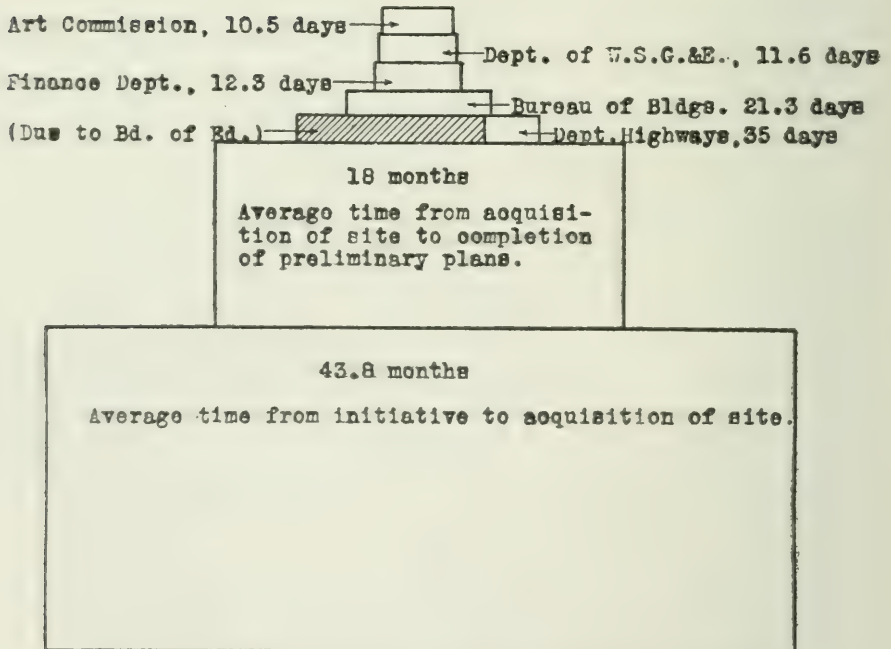
4—Total.

(See Recommendation No. 3.)

CHART III

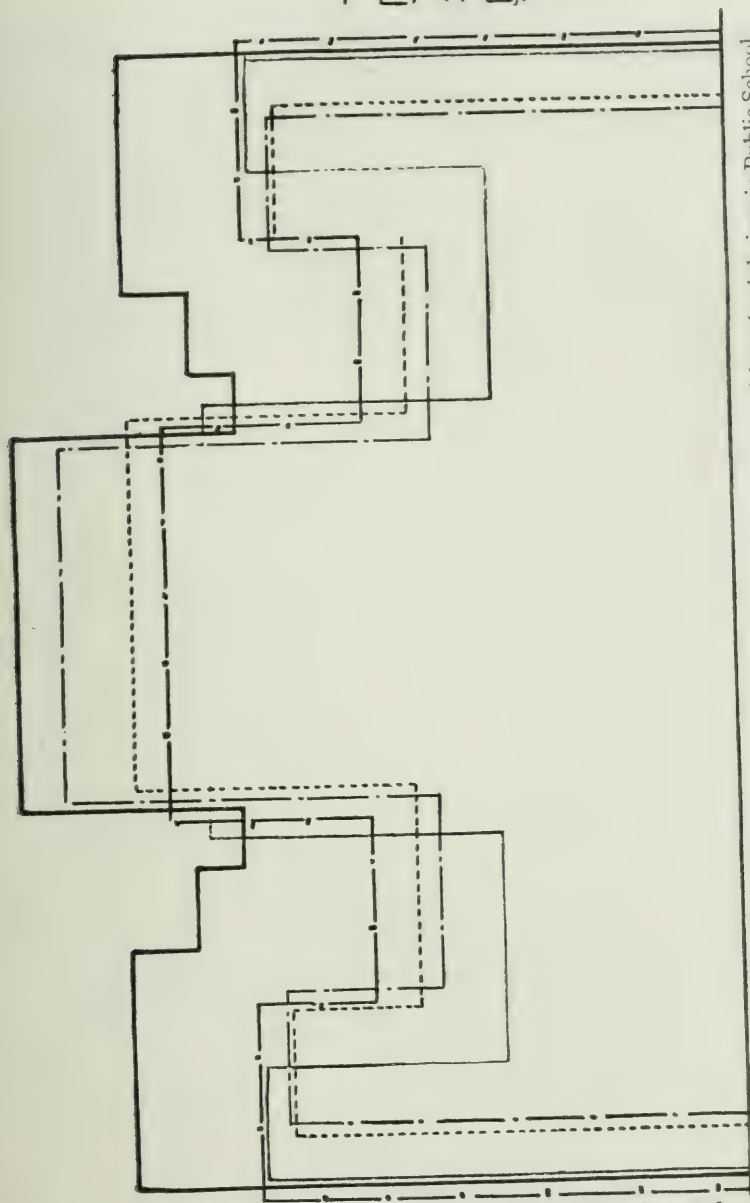
AVERAGE COMPARISON OF THE TIME INTERVALS IN VARIOUS STEPS OF
SITE SELECTION, PREPARATION AND APPROVAL OF PLANS AND
SPECIFICATIONS FOR THE TWENTY SCHOOLS
CONSIDERED IN THIS REPORT

(General construction only.)



Report No. 4 - Charles G. Armstrong & Son,
May 21st, 1913-

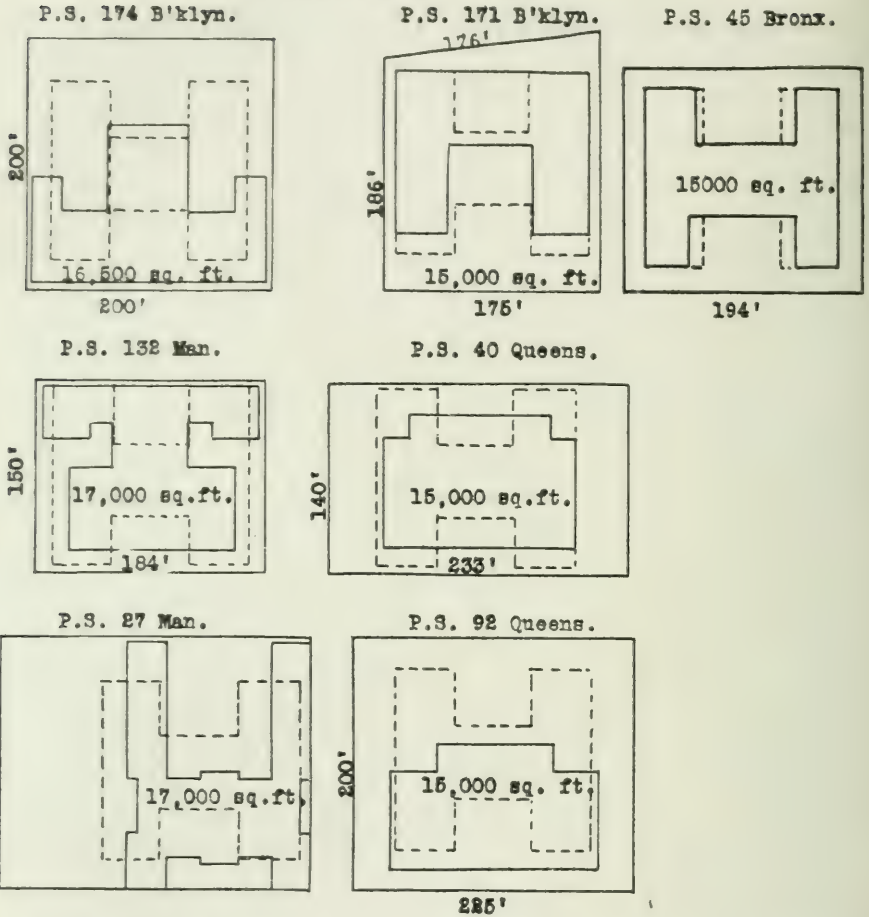
PLATE A



Committee on School Inquiry Report #4 Chas. P. Armstrong & Son

Composite diagram showing five ALMOST STANDARDS which have been used for school designs in Public School 173 Brooklyn, Public School 168 Brooklyn, Public School 174 Brooklyn, Public School 61 Manhattan, and Public School 47 Bronx. These schools could have been designed from standard patterns; however, each was designed sufficiently different from the rest to necessitate a separate and individual design. Unquestionably this criticism applies with equal force to a large number of other school buildings throughout the city.

PLATE B



The above drawings illustrate several instances in which standard schools of equal or greater capacity could have been constructed upon the same plots allotted to the various schools.

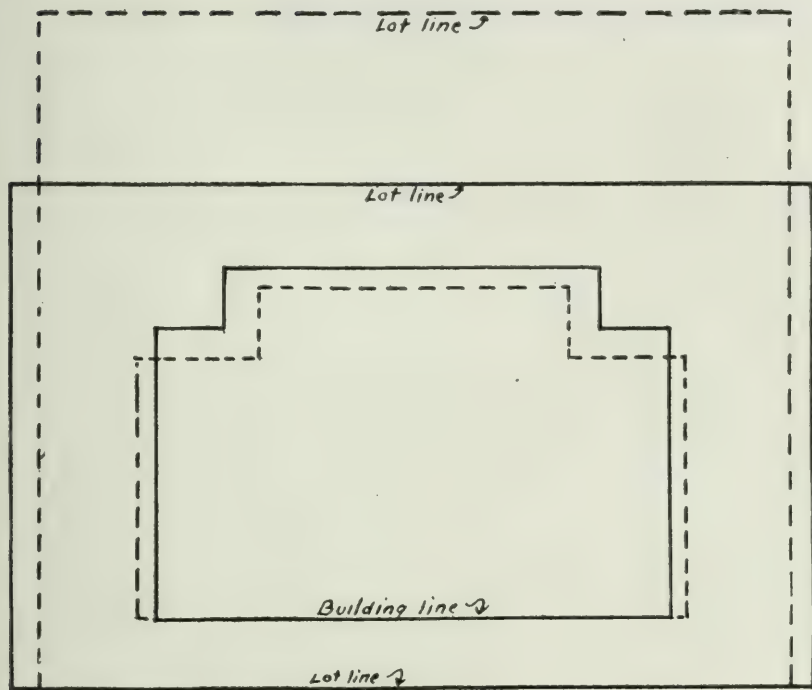
Full lines indicate present school and size of plot.

Dotted lines indicate a possible standard of 17,500 square feet of ground area.

See "STANDARD SCHOOLS"—Section II of this report.

Committee on School Inquiry, Report No. 4, Chas. J. Armstrong & Son.

PLATE C



THE ABOVE DIAGRAM INDICATES THE NARROW MARGIN
BY WHICH STANDARD SCHOOLS WERE AVOIDED.

Full lines indicate Public School No. 40—Queens.

Dotted lines indicate Public School No. 92—Queens.

REPORT ON
NEW YORK PUBLIC SCHOOLS

DELAYS IN THEIR LOCATION, DESIGN
AND CONSTRUCTION

REMEDIES SUGGESTED

SECTION II
REPORT IN DETAIL

CHARLES G. ARMSTRONG,
FRANCIS J. ARMSTRONG,
Consulting Engineers.

CITY OF NEW YORK
1911-1912

SECTION II—THE REPORT IN DETAIL

Assignment

Public school buildings in New York City require from 50 to 400 per cent. more time for construction than buildings presenting equal natural difficulties but privately owned and constructed.

The fact has been recognized by the Board of Estimate and Apportionment as one of the deficiencies in our public school system. This Board requested the compilation of this report in an attempt to discover why this deplorable condition exists, where the delays occur, and to suggest remedies in cases of avoidable delays.

Difficulties Encountered

One of the greatest difficulties encountered in the preparation of the data presented herein was the opposition from the most unexpected quarters. The departments from which the most willing assistance was anticipated presented opposition akin to antagonism. In the case of the Board of Education, we were informed that, while many causes of delays in school construction could be shown by that department if the officials cared so to do, they had decided to submit only such information as was specifically asked for and not to assist in any way.

In other departments, although information was not refused, it was given only after much parley and delay.

In one department, although informed by correspondence that their records were at our disposal, yet access to same was refused by the minor subordinates in the office. The answers to requests for corroboration of certain dates were delayed nearly fifty days, and were then only obtained after heated correspondence.

Another difficulty experienced was the apparent lack of accurate knowledge within the Department of Education as to facts desired.

The only available book in the Architectural Department of the Board of Education containing facts as to dates drawings were submitted or commenced was the personal note-book of one of the officials.

All data obtained from this Department had to be checked by the records of the other Departments and altered in many cases, as shown hereinafter. Apparently there were no books or records available in the Department of Education which contained accurate information on the time taken by the various necessary steps in school building construction.

Another interesting item, but one of minor importance, was the disclosure of the following condition:

Several contractors who had constructed schools were interviewed and asked where unnecessary delays existed and what were their causes.

Invariably the answers given were that they were afraid to give any information on the subject, although plenty such data existed in their files. They dared not give facts to the discredit of any City Department for fear of persecution from that Department in future work.

Method of Investigation

Twenty schools were selected as representative examples—most of them being of recent construction or design.

The correspondence and minutes of the Board of Estimate and Apportionment, also that of the Board of Education, were examined for facts regarding selection and purchase of sites.

The Architectural Department of the Board of Education was asked by letter on July 31, 1912, for information concerning the progress of conception, design, and erection of the schools under construction on that date. This letter and its reply, dated August 8th, 1912, are contained herein and presented as an illustration of the difficulties met with. (See exhibits "G" and "H.")

Letters were exchanged August 12, 13, 16, and 19th, 1912, on which dates information was promised as soon as "possible." The data in question was thereafter duly received in the form of blue prints dated August 3, 1912, a copy of which is included herein (see Charts 5, 6, and 7). The dates contained in these prints were checked through other channels and found to be somewhat at variance with the facts. A second set of prints were compiled under date of October 9, 1912, of which only the changes from the original are copied in this report (see Charts 8, 9, and 10). These later prints, although supposedly correct, required a change of 26 days in one date in less than 5 minutes after being received.

To the Department of Finance on October 7, 1912, and the other City Departments on October 14, 1912, were sent a list of dates obtained from the Department of Education as pertaining to that individual Department with a letter asking for confirmation of, or exceptions to, the dates submitted. Illustrative letters and replies from each Department are appended to this report (see Exhibits A-D inc.).

Many changes were necessitated in the dates first received and the final corrected lists are shown in the individual details of each school included hereinafter.

Many discrepancies between the original and corrected dates are of a few days which might intervene between the sending and receipt of

plans or letters, and some others are misunderstandings as to responsibility.

Investigation for Procedure of Site Selections and Acquisitions

The formal procedure usually followed in the selection and purchase of sites for new schools is as follows:

- 1—The local school board, district superintendents, members of the Board of Education, principals, or citizens initiate the request for a school at a certain location.

These may or may not be public-spirited requests, the chances are much in favor of their being of personal rather than public interest.

The Board of Education

- 2—(a) The request is referred to the Committee on Sites, whose duty is to examine into the merits of the case and recommend a suitable site in the locality.
- (b) The report of the Sites Committee is often referred to the Committee on Buildings.
- (c) The Committee on Buildings often receives reports from the City Superintendent of Schools and Associates.
- (d) The preliminary reports of the above Committees are often passed along to the Permanent Census Board, which consists of the Mayor, Police Commissioner, and the City Superintendent of Schools.

Owing to the problematical interference of the former two members of the Permanent Census Board, the report is still in the hands of the City Superintendent. The duties of the Permanent Census Board are to scientifically determine the merits of a school at the locality selected.

- (e) The Committee on Finance usually receives the report from the other Committees, and then
- (f) The Board of Education is next in receipt of these reports, from where they are passed to the Board of Estimate and Apportionment.

Procedure in Board of Estimate and Apportionment

- (a) In the Board of Estimate and Apportionment the subject is referred to the Budget Committee at once.
- (b) Reported back to the Board of Estimate and Apportionment by the latter Committee, and
- (c) Adopted by the Board of Estimate and Apportionment, and referred to the Board of Aldermen.

Procedure by Board of Aldermen

- (a) Received from Board of Estimate and Apportionment and referred to Committee on Finance at once.
- (b) Reported back to the Board of Aldermen from Finance Committee.
- (c) Adopted by Board of Aldermen and returned to Board of Education.

Table I, showing delays in acquisition of the school sites and in the approval of the plans considered in this report, illustrates that the above process is accelerated somewhat by the fact that the formal proceeding is not actually adhered to in the Board of Education, but is facilitated by the cooperation of the following Committees and Departments:

Board of Education.
 City Superintendent and Associates
 Permanent Census Board.
 Budget Committee of Board of Estimate and Apportionment.
 Real Estate Appraiser, and
 Department of Finance.

It will also be found in this table that a material decrease in delays has occurred since the Board of Estimate and Apportionment insisted upon a statement from the Board of Education showing the order of priority and upon the use of population data and other local surveys for selection of school sites. However, it is only fair to include the explanatory data following Table I, which indicates the reasons for delays, in particular those occurring between 1907 and 1910, page 713.

The investigation of the public schools in 1904 by the Department of Finance and the Committee on Vacant Property of the Sinking Fund Commission shows that selection of school sites by the above methods is extremely haphazard and lax, and not in accordance with modern economy. The initiative should come, not from public demands or speculation, but far in advance of the school needs, and should be determined by scientific calculations.

Such determination would have made impossible the delays shown herein, particularly the delay between initiation of requests for schools and the authorization of funds for sites and buildings.

The case of School No. 171, Brooklyn, mentioned in the detailed data appended hereto, very clearly illustrates the unnecessary delay which has obtained heretofore in the determination of the needed site. (See Map No. I.)

The fact that there are to-day approximately 90,000 pupils on part-time, is due in a large measure to this erroneous method of locating school sites.

Records of the Board of Education show that there are seating accommodations available for all of the above, but not properly distributed.

Recommendation No. 1

In order to show the imperative need and to definitely settle conflicting ideas as to proper location of schools, the Permanent Census Bureau should have—

- (a) Accurate data showing the trend of population and its growth in density, block by block, shown clearly on maps.
- (b) Accurate records of new building operations, improvements and transportation facilities.
- (c) Accurate records of proposed buildings and future transit possibilities.
- (d) Available sittings occupied and unoccupied, district by district.
- (e) "Part time" by grades, school by school.
- (f) Census data showing the population under school age and its growth and tendencies.

The Census Board, the Auditor, and the educational authorities should furnish to the Board of Estimate and Apportionment periodical estimates and needs for new buildings based upon accurate data as outlined above.

These estimates should be so compiled that the necessary locations for future schools will be known two years in advance. This time should be sufficient in which to construct a school building.

The selection of a school site by the careful use of such records would be strictly in accordance with modern methods, and would effectively solve the problem of site selection.

Under the present system, which consists of waiting for the demands and then going through the three and one-half years of site selection, two years of design, and other circumlocution before the plans are completed, and ten months or so of "red tape" before the opening of bids, all seemingly required before the actual construction is commenced, it is quite possible that the Board of Education should find itself in possession of a school for which the acute need has ceased to exist.

In one instance cited herein, where eight years elapsed, the pupils originally on "part time" would have outgrown their school days before the building was provided.

AVERAGE TIME CONSUMED IN DRAWING PLANS, ETC.

From the detailed data assembled in Section III of this report pertaining to the twenty schools investigated, the following averages have been deduced:

- 1—Average time spent from the first apparent need of a school, when reported, to the acquisition of its title.....43.8 months
- 2—The average time between the securing of site to the submission of preliminary plans for the building to the Art Commission18 months
- 3—The average time spent by the Department of Finance in approval of construction plans12.3 days
- 4—The average time spent by the Department of Water Supply, Gas and Electricity in approval of construction plans....11.6 days
- 5—The average time spent by the Bureau of Buildings in all Boroughs considered as a unit.....21.3 days
- 6—The average time spent by the Art Commission.....10.5 days
- 7—The average time spent by the Highways Department, all Boroughs as a unit35 days*
- 8—Average time spent in Department of Finance on approval of heating and ventilating plans and specifications.....16 days
- 9—Average time spent in Department of Finance on approval of electrical plans and specifications14.5 days
- 10—Average time spent in Department of Finance on approval of furniture plans and specifications.....22.2 days
- 11—Average time spent by Board of Estimate and Apportionment on approval of heating and ventilating plans and specifications.8 days
- 12—Average time spent by Board of Estimate and Apportionment on approval of electrical plans and specifications.....9.5 days
- 13—Average time spent by Board of Estimate and Apportionment on approval of furniture plans and specifications.....7.7 days
- 14—Average time spent in Department of Water Supply, Gas and Electricity on approval of heating and ventilating plans and specifications 22 days
- 15—Average time spent in Department of Water Supply, Gas and Electricity on approval of electrical plans and specifications 26.5 days

As a brief comparison of the time spent in municipal work, as compared with private work, the following data pertaining to the Municipal and Woolworth Buildings is given:

These two buildings presented nearly equal natural difficulties, and

*The high average in this case was caused by the facts that only 7 schools required attention from the Department of Highways, and in two cases out of the 7 at least 27 days in each were lost owing to negligence on the part of the Superintendent of School Buildings of the Board of Education.

were constructed almost contemporaneously and largely by the same contractors.

This goes to show how great a portion of the construction is due to "red tape" in municipal work.

The total time required by each building is as follows—

Municipal Building	4 years
Woolworth Building	2 years, 2 months

NOTE—The Woolworth Building was occupied two and one-half months later than estimated at the time these figures were compiled and the time required to fully complete the Municipal Building will also be extended.

COMPARISON BETWEEN MUNICIPAL AND WOOLWORTH BUILDINGS AS TO
THE TIME TAKEN FOR CONSTRUCTION

	<i>Municipal</i>	<i>Woolworth</i>
Plans filed in Bureau of Buildings.	Oct. 31, 1908	April 29, 1911
Excavation begun	June 7, 1909	November 2, 1910
Foundation finished	December, 1910	December, 1911
Total period	18 months	13 months
Steel frame work begun.....	June, 1910	September, 1911
Finished	July, 1911	July, 1912
Total period	13 months	10 months
Exterior walls begun	March, 1911	February, 1912
Finished	Oct., 1912	January, 1913
Total	19 months	11 months
To be ready for occupancy	June, 1913	January, 1913
Total time	4 years	2 yrs., 2 mo.
Cubical contents	19,400,000	13,000,000
Total gross floor area.....	29 acres	33 acres
Gross section of average floor area.	39,000 sq. ft.	20,000 sq. ft.
Area of site.....	92,000 sq. ft.	30,000 sq. ft.
Cost of building alone.....	\$12,000,000	\$7,500,000
Cost of site.....	\$6,000,000	\$5,500,000
Height	580 feet	750 feet
Number of floors.....	40	55
Floors in tower.....	15	25
Weight of total building.....	180,000 tons	123,000 tons
Weight of steel work alone.....	26,000 tons	24,000 tons
Deepest caisson on rock.....	112 feet	130 feet
Number of caissons.....	106	61
Number of bricks.....	12,000,000	17,000,000
Number of windows.....	2,000	3,000
Doors	2,000	3,000
Elevators	33	28

DEPARTMENTAL REVIEW OF PLANS

Fire Department

According to the records of the Board of Education, no review of their plans was made by the Fire Department.

Building Department

This Department passes only upon plans and specifications as to fire protection, safety of construction, and the adequacy of the plumbing and drainage. There are set rules and regulations published by this Department to which all plans must conform.

Highways Department

This Department has control of the issuing of permits for the use of such portions of the buildings as extend beyond the building line.

Health Department

According to records of the Board of Education no review of their plans is required by this Department.

Art Commission

This Commission passes upon the fitness of the architectural design as compared to the surrounding architecture and natural conditions.

Department of Water Supply, Gas and Electricity

This Department assumes full responsibility for all electrical work. All plans and specifications of electrical installation, including fixture design, are passed upon by this Department.

The actual installation is also inspected to certify as to the fulfillment of specifications and plans.

Finance Department

This Department examines plans and specifications and the form of contract for errors and need of amendments. The estimates of cost are also examined and computed as to their reasonableness and with a view of possible decreases. Inspections and approvals are made for the determining of payments.

ACTUAL WORTH OF SUCH REVIEW

All statements of work accomplished by the various Departments are appended hereinafter in exhibits "B" to "F" inc., the comments on which are herein given:

Building Department

The majority of objections to plans and specifications by this Department consist of minor details such as

"plans and applications do not agree as to thickness of fifth story front wall, as to fourth story rear wall,"

but which could not be dispensed with without incurring the possibility of many "extras" on contracts and the danger of carelessly designed structures. The tendency in this Department is to blindly adhere to compiled tables rather than to depend upon more general regulations based upon good judgment and experience. In cases under personal observation, changes in building plans required by this Department would have rendered the building less safe than good engineering judgment would allow.

There is always the possibility of disagreeable, overbearing and malicious personalities on the part of clerks or inspectors, who may annoy, delay, or facilitate the execution of work, depending upon circumstances. (See Exhibit "F"—Part I—Item No. 1.)

In the cases noted hereafter, the foundations in the Washington Irving High School were improved, but in this case 23 days were spent in useless argument about thickness of foundation walls, the objection to which was eventually waived by the Department of Buildings. (See Exhibit "F"—Part I—Item 2.)

Normal College

Work accomplished by review of this Department was the redesigning of footings, change in wall material and change in steps with safety additions.

No. 72—Manhattan

Frame building objected to. Coal vault openings made accessible. Structure wall stronger.

No. 61—Manhattan

Foundations improved. Steps improved.

No. 92—Queens

Floor construction changed.

The review of plans by this Department, however, is undoubtedly a necessity.

Highways Department

This Department must review all plans of buildings having portions beyond building line. This cannot be dispensed with.

Art Commission

It is absolutely necessary to the beauty of the City to have some central review of all architecture to prevent the construction of monstrosities. (See Exhibit "D.")

Department of Water Supply, Gas and Electricity

It is very necessary to have some review of electrical plans as to their safety, but not always as to the design of the electric fixtures.

All gas plans should be reviewed as to safety by this Department.

Outside of inspection of installation to insure full value to the City and the review of plans as to safety, the value of this Department with respect to plans of other Departments is problematical.

In the case of the Bushwick High School this Department required the Board of Education to eliminate the electric generator plant, it being the policy of this Department to do so in all cases. The correspondence in this instance will be found in Bushwick High School. (Exhibit "C"—Part 4.)

This correspondence is introduced to show that the interference of the Department of Water Supply, Gas and Electricity in matters outside of its duties may produce a loss to the City in time as well as money.

Finance Department

This Department has and should have all control over plans and specifications to be put into force with City money in so far as the finances are concerned. Correspondence on School No. 61—Manhattan (see Exhibit "B"—Part 4) shows suggestions pertaining to the Building Bureau made by the Department of Finance, i. e., the matter of concrete mixtures.

Exhibit "B" gives in brief the changes made by this Department on plans and contracts.

NECESSITY FOR REVIEW OF PLANS OUTSIDE OF THE BOARD OF EDUCATION

The Board of Estimate and Apportionment, being directly responsible to the public for the City's funds, should have full control over the expenditures of the same. If the Board of Education, or any other Department of appointive nature not responsible for City finance, were allowed unrestricted appropriations, the abuses of public funds would be unlimited.

In 1910 the Board of Estimate requested the various City Departments to estimate for five years in advance their respective needs for corporate stock. The records show that the appropriation asked for upon this basis by the Board of Education and other City Departments, if allowed in full, in the short space of five years would equal the entire present gross debt of the City, viz., \$1,000,000,000. This fact conclusively proves that some responsible and governing body must control the finances of the City.

The findings herein and those in a former report upon the "conditions and efficiency of public school buildings" would go to show that the Board of Education has been careless in conserving City funds and has exhibited a lamentable lack of foresight in engineering matters.

In the above mentioned report it is shown that the school plants are wasteful and antiquated, both in design and operation. The results show

a waste of \$492,527 per year, for which the Board of Education is entirely responsible.

From the above showing it is evidently necessary that the plans of the Board of Education should be reviewed by those responsible to the public for the City's finances.

Recommendation No. 2

It is recommended that the Board of Estimate and Apportionment appoint and maintain a Board of Engineers known as "Efficiency Bureau," whose duties would be to insure the maximum of efficiency in all engineering matters with a minimum of expense to the City.

This Bureau should take the place of all other engineering bureaus in City's employ pertaining to public works of this character, and should have absolute authority over all city engineering of this type.

The duties of this Bureau should not necessarily be to make engineering designs for all Departments, but to pass upon all such designs as to their mechanical adequacy and efficiency.

This Board of Reviewing Engineers, should consist of engineers and architects of well-recognized ability, and should be the final "Court of Appeals" on all technical points in all construction work done by the City.

PLANS FOR BUILDINGS AND CONSTRUCTION

In a well planned and designed building of any sort the architectural, electrical, heating and ventilating, and plumbing plans are all considered and designed at the same time as and in accordance with the general scheme of construction.

The plans for the power plants are as much a part of the building design as the architecture, and, in public schools where children are compelled to sit day after day within the building studying the requisites of good citizenship, ventilation, cleanliness, and fire protection are far greater items of importance than the appearance of the building.

No good designer of modern times would design and contract for the construction of one important part of a building or structure of any sort without due respect to all other parts.

In the early days of automobile construction the body work was conceived and built first, after which the important part, viz., the motive power, was concealed as conveniently as the ornamental work would permit.

It would seem that our public schools are to-day designed in the same manner. The architecture is designed and often contracted for before the final ideas for the ventilating, the heating, and the electrical work are completed. In the case of Public School No. 40—Bronx, for instance, the heating and ventilating plans were completed and approved over three months after the contract for the construction had expired.

PUBLIC SCHOOL NO. 40—BRONX

Construction contract approved October 11, 1910.

Construction contract expired July 4, 1911.

Heating and ventilating plans sent for approval, June 20, 1911.

Heating and ventilating contract, final approval, October 17, 1911.

In many other cases the plans of the component parts of the school buildings are designed and submitted to the various Departments for approval with intervals of months between the items.

The interval between the approval of the general construction plans by the Board of Education, which period indicates the completion of said plans, and the transmission of heating and ventilating specifications to the printer, which represents the first complete conception of the heating and ventilating design, ranges, in nineteen cases noted, from 167 days to 1,175 days, of which the average is 372 days.

From these figures it is not difficult to understand that many complications and discrepancies may occur between two sets of plans designed at such remote intervals, especially plans so dependent upon one another as general construction and heating and ventilating.

Not only does such a condition interfere with the proper design within the Board of Education, but also necessitates many "back sights" and references to former plans on the part of the other City Departments, in order to fully comprehend the intentions of the designers and properly consider the same in approval.

In the case of Public School No. 47—Bronx, three weeks and two days were required in the Department of Water Supply, Gas and Electricity for construction approval, and three weeks and one day for electrical work.

The statement of the Chief Engineer of this Department "if both plans were sent together they would have taken about three and one-half weeks" illustrates the point that, were all plans for any one school sent as a unit, the time of approval in all outside Departments would be practically the same as that required for one.

Not only is the time of approval and formalities multiplied by this defection, but the time spent in preparing the plans and specifications with the Board of Education must necessarily be increased, particularly if changes are required in one completed set by the discovered needs of the next set.

It stands to reason that if, as in the case cited above, one contract is let before the plans of other dependent parts of the building are planned and approved, many changes and extras must be executed in the original.

Quite likely walls and plastering must be torn out to accommodate pipes, ducts, etc., which may or may not have been properly provided for in the existing work.

Recommendation No. 3

Therefore, in order to save the multiplication of time spent in approval in outside Departments, time lost, and possible complications and inefficient designs in the Designing Bureau, as well as to facilitate the actual construction and to conserve the City's finances, it is recommended that all plans for school buildings in New York City be planned, drawn, and submitted for approval as a unit.

If this were done and each portion of the building were designed with full respect to its importance and its proper relation to its neighboring portion, the present deplorable condition of inefficiency and inconveniently designed school plants would be eliminated.

STANDARD SCHOOLS

In New York City the Architect of the public schools has standardized many of the details and some of the general forms of the building structure. This has facilitated much of the routine work connected with the design of the schools and securing departmental approval thereof, but this standardization has not been carried as far as it should be.

The art of school design has progressed beyond the experimental stage. Without further study, the present school architect should be able to put forth a school "standard" in every detail. The requirements of a school in one portion of the City do not differ sufficiently from that in another portion to demand a new design of building in each case.

Under modern conditions of mechanical and educational efficiency, after having designed and adopted one (or twenty, if necessary) absolutely standard school buildings, the time now spent in preparing new plans for each building and securing the approval of all City Departments on the same would be eliminated.

Once the site has been acquired, the time interval between appropriation of funds and the opening of bids would be cut to a few weeks, during which the Art Commission could select the "standard" best adapted to the surrounding architecture, and a much reduced draughting force of the Board of Education could prepare foundation plans conforming to the local conditions. Two more weeks would be sufficient to award the contract, and a few days for registration by the Finance Department would be all the time then necessary before construction.

The construction itself would be much simplified after standardization.

School Contractors would know to a nicety the exact cost without refiguring, and could save the City the cost of estimating, which is a considerable item.

It is impossible to estimate the exact savings attainable under this system, but they would amount to at least 10 per cent. of the total cost

of construction, which in many cases would be approximately \$50,000 per school.

According to the "1911 Annual Financial and Statistical Report of the Board of Education" \$29,878,778.67 were spent on school building construction and equipment in the five years from 1906 to 1911. From this average the cost of buildings per year was \$5,975,755.73.

Considering that standardization would eliminate 10 per cent. of the building cost, the City would save \$597,575 per year in this instance alone, not including the resultant reduction in the architectural force.

Many arguments have been advanced against the use of standard plans for schools, some of which we will answer herein and explain more fully the advantages and utility thereof.

It has been said that the available school plots were of such irregular shapes and grades that the use of a pre-designed building would be impossible. In some very rare instances this might be true, but, as shown on plates B and C of this report, such a possibility is too remote to be considered a worthy argument.

When purchasing plots, the natural advantages of location, light, air, and altitude should always be considered, and so should the adaptability of the plot to the use of a standard plan.

Few, if any, of the existing school plots are sufficiently irregular in form to exclude the use of such a plan.

With standard buildings in existence, it will be very easy in the future to purchase school plots which will accommodate the desired building.

As to the variety of grades encountered, it is seldom indeed that New York schools are built upon grades so extreme as to necessitate a change in other than basement heights and foundation plans.

The quality of soil varies in the different instances, but in the case of three or four-story buildings, except in extreme conditions under which a school should not be constructed, the foundation design is entirely incidental to the building structure.

It is doubtful if the general designs of any of our New York schools were altered or affected by the soil conditions. In practically all cases building plans are completed before the exact nature of the soil is determined by excavation.

The foundation plans should be adapted to the conditions, of course, but such should not affect the building design.

The columns and piers are always placed upon foundations suited to the soil and seldom indeed is the case where columns and piers are re-designed for soil conditions.

As to the question of external architecture, it should be possible to evolve a type of school which would agreeably match any type of surrounding architecture.

Our New York schools are copied from Italian Renaissance and

Romanesque, Americanized French Renaissance, or English Gothic architecture of hybrid types, and, in spite of the vast number of schools constructed, no distinctive and original type of American school architecture has been developed.

It is not contended that the present buildings are exactly suitable as "standards," but such a type should be developed and perfected that would be in good taste, surrounded by any other type of architecture.

As to the interior of the schools it is only architectural extravagance to attempt more than a simple type of absolutely sanitary design. The value of architectural elegance is questionable with the average New York public school pupil, and is extremely less important than healthful, economical, fireproof, and sanitary conditions.

School interiors should be plain and severe and the greatest ingenuity should be used to avoid "dust pockets" and inaccessible angles or curves.

School furniture should be constructed of pressed steel or other non-combustible material, and the walls, floors, and ceilings should be of washable material devoid of angles or unsanitary projections.

It should be possible to turn a hose upon all parts of every school room and wash without injury all parts thereof.

The windows should be of metal frame type devoid of "dirt pockets."

In other words, a school should be, first of all, fireproof; second, sanitary; third, supplied with adequate proper ventilation; fourth, convenient for exit and entrance; fifth, efficient and economical in operating expenses, and, last of all, and the least important, architecturally distinctive and beautiful.

It is recognized that certain classes of architects and some contractors will oppose the simplification and standardization of building structures for obvious reasons.

There are certain contractors who would resent the simplification and standardization of plans for the reason that the more indefinite and the less publicly understood the nature of the work is, the greater the profit becomes.

All professions, and the various branches of business, whether it be medicine, engineering, architecture, or other occupation, owing to modern tendencies toward simplification, are becoming more and more standardized and universally understood.

The quackery and apparent mysteries are being eliminated and, as a result, the professional man is becoming more of a feature of business and less of a charlatan or "Medicine Man."

A "standard school" should be built upon the unit plan, with every detail standardized and kept in stock.

Doors and door frames, window frames, partitions, and other fixtures should be rigidly standardized and constructed of asbestos or

pressed metal. Such fixtures should be kept in stock available for use at any time for construction and maintenance.

The buildings themselves should be in class room units, not necessarily of the portable type, but of original and adaptable design, permitting of extension toward a finished and distinctive ultimate form.

Modern engineering has rendered the problems of standardization exceedingly simple. It is quite possible that such a plan would not have been feasible five years ago, but modern solutions of the problems of acoustics, ventilation, and building construction have made the standard school not only practical, but advisable.

COMPARISON OF BUILDING COSTS

As a comparison between the cost of school buildings per cubic foot in New York City and elsewhere in the United States, there is given below the average cost of six New York schools selected at random and the average cost in other parts of the United States.

Average Cost of Grade School Buildings in

¹ Chicago	14.00c. per cubic foot
² Cleveland	14.94c. per cubic foot
³ New York City.....	23.316c. per cubic foot
⁴ Other small cities in New York	
State	15.08c. per cubic foot

This comparison, while not embracing all schools in New York City, gives a general idea of the comparatively high expenditure for schools under the present system of design.

Recommendation No. 4

It is recommended that the officials of the Board of Education complete their partial standards and prepare absolutely "Standard" school plans in sufficient variety to conform to all reasonable variations of architecture in the City. These plans should be made standard in every detail and then be passed upon by all City Departments and filed.

Thus, barring possible new foundation details, drafting, designing, or approval work would not be required before advertising for bids, and the operation of bidding would become extremely simple by reason of established precedent. In fact, this standard could become as well known as any standard article of manufacture.

Authority—

¹Professor James E. Armstrong, President Board of Commissioners, Ridge Park district, Chicago.

²Cleveland Board of Education.

³Board of Education, New York City.

⁴New York State Education Department.

REVIEW OF PLANS BY OUTSIDE DEPARTMENTS

The review of plans by the various City Departments, according to the averages obtained from the twenty instances examined, has entailed an average of four and one-half months, some of which time was consumed by the Board of Education, but which time is wholly chargeable to the necessity of outside approval.

It has been shown (see Exhibits "C," Part 4, and "B," Part 4) that the interference of City Departments outside of the Board of Education in some cases was unwarranted and that valuable time was lost because of this interference in matters not included in the scope of the duties of those Departments.

The Department of Finance, the Bureau of Buildings, and the Department of Water Supply, Gas and Electricity, all make engineering criticisms of the same work, and this multiplication of criticism causes a great loss to the City.

While the institution of the above-suggested "Bureau of Efficiency" would concentrate all engineering duties, yet, to obtain the best results on all subjects, each City Department should supervise only such work as pertains to that Department and nothing further. See "Departmental Review of Plans."

Recommendation No. 5

To accomplish this end it is recommended that each City Department where approval is required should publish a complete set of rules and regulations clearly outlining the requirements of such Department.

The approval of any City Department should pertain to technical details only.

The approval of each Department would then signify that these rules and regulations had been complied with and nothing more.

The Art Commission would, of course, be an exception to this recommendation.

Should any Department withhold approval or notice of disapproval for a period of approximately ten days, the decision as to the mechanical adequacy of the plans should automatically revert to the "Efficiency Bureau" above mentioned.

ENGINEERING WITHIN THE BOARD OF EDUCATION

The present school buildings have been found to be lacking in engineering economy.*

This fact has much to do with the delays in construction and the excessive cost of school buildings now existing in New York City.

Many school plants are designed with little or no regard for their efficiency or ease of operation.

*See Report on "Condition and Efficiency of New York Public School Buildings."

In many instances boiler plans are so designed that the individual boilers of the plant are separated widely in different parts of the building.

Schools Nos. 87 Brooklyn and 22 Manhattan, also Erasmus High in Brooklyn, have boilers so inconveniently separated that it is difficult and even impractical to transport coal from one to the other.

The ventilating systems in our schools incur well-deserved criticism throughout the engineering profession.

In a former report on "Condition and Efficiency of Public School Buildings of New York City" many of the faults of the ventilating system were pointed out, and in a succeeding preliminary report on ventilation more defects were shown. The subject is still being investigated and a complete detailed report on this, the most important feature of school engineering, will be made at a later date.

For the purposes of this report, however, it is sufficient to point out the main defects in the present system.

The air inlets, through which air is drawn at high velocity, are located generally at the points best calculated to receive the filthiest air conditions, with no air washers or filters provided to prevent the dirt thus obtained from being blown into the school rooms.

These inlets are located at the street levels, sometimes flush with the dirt of the school yard, and acting as a shoe-scraper and cuspidor for the children, sometimes just above the sidewalk of our dusty East Side streets, and, in one known case, in close proximity to a foul air outlet of another school.

The air powerfully sucked through such openings is passed over steam coils unwashed and unscreened and blown into the school rooms.

The effect of the steam coils is to heat into activity the disease germs entrained in this questionable fresh air and thus render it less fit to breathe than if admitted through open windows.

These systems are so designed as to compel the sealing of the rooms by keeping the windows closed at all times.

Should a window be opened the system is thrown out of balance.

Aside from the psychological effect upon the teachers of not permitting the opening of windows, the necessity of such for the successful operation of the system, lays its design open to severe criticism from an engineering standpoint.

In a school building where the ventilating apparatus, fire protection, safety, and economy of the power plant are of paramount importance to the health and safety of the hundreds of confined school children, as well as their education along modern lines, it is absolutely necessary to consider these items as of greater importance than the appearance of the building.

Recommendation No. 6

It is recommended that the Board of Education should employ an engineer of as well-recognized ability in engineering work as their archi-

tect is in his line. This engineer to have full and absolute authority over all engineering matters controlled by the Board of Education.

AS TO THE QUESTION OF SELECTION OF BIDDERS

It is well recognized in engineering circles that municipal work of all kinds draws a cheaper and more adventurous class of Contractors, a class which relies for its profits upon "beating" the specifications and upon cheaper prices with inferior workmanship and material, rather than upon efficiency, management, and adherence to specifications with higher quality of goods.

When an engineer or an architect is compelled to accept the proposition of the lowest bidder, irrespective of his business standing, he can not insure to his client the grade of work originally intended. No matter how carefully he draws his specifications or how minutely he superintends the work, a dishonest contractor can always deceive him and perpetrate frauds in workmanship and material without immediate detection.

The work of construction is always impeded whenever there is a disagreement between the designer and the Contractor, and such always occurs when either side is dishonest. In private construction work, where the best Contractor can be selected regardless of initial price, the best and quickest construction is assured and, in practically every case, the difference in prices between the lowest and the best contractor is more than saved in lack of extras and in ultimate maintenance.

In municipal work, due to unscrupulous designers in the past, the selection of the Contractor was taken from the jurisdiction of the engineers and architects and the contract awarded to the lowest bidder, unless there existed absolute evidence of fraud or financial disability in his former dealings with the City.

Even though the designer is morally certain, without concrete proof, that the lowest bidder will cheat on the construction, despite his most careful inspection, he is compelled to accept the bid, knowing that eventually the City will suffer in value received.

This condition will prevail so long as the City is compelled to accept the proposal of the lowest bidder, regardless of his standing in his profession. Just so long as this condition exists public buildings will continue to take much more time for completion than is required for private work.

Recommendation No. 7

To avoid such losses of time and money it is herein recommended that there be created a "Board of Censorship" whose duty shall be to compile, maintain, and publish a carefully kept list of Contractors eligible for City work in every branch of trade.

This Board should consist of eminent engineers and architects of undisputed ability and standing, who should serve without pay and be selected by the Board of Estimate and Apportionment.

The institution of such a Board will enable the City to procure a better class of Contractors.

It will also enable the City to eliminate Contractors of little or no experience, as well as those who have previously shown themselves to be dishonest or faulty in their work. A precedent for the above may be found in the present law on defaulting Contractors.

Recommendation No. 8

WIDER USE OF SCHOOL BUILDINGS

We recommend the fullest consideration at once, of the plan outlined in the attached calendar chart, which we previously submitted, for the reason that it can be made applicable at once to elementary schools. Although changes in details may be necessary, the principle evolved should be given serious consideration by educators, as it would render unnecessary much of the building operations now in contemplation in certain sections of the City.

In the foregoing report we have endeavored to show why it takes so long to build a school building in New York City and why it costs more to build a school building in New York City than in other cities, and have suggested the remedies therefor.

The wider use of school buildings is a much discussed subject. Considering that the original purpose of a school building is to provide accommodations for the education of children, and that there are approximately 90,000 pupils without such accommodations in New York City, this subject becomes of paramount importance.

The plan as contemplated in Chart No. 4 provides for the use of buildings the year around, and to approach as near as possible to a continuous "load factor" for the schools. There are four terms per year considered, any three of which would be for regular academic classes—the fourth for vacation. This vacation is to be at the option of pupil or teacher in any of the four seasons of the year.

For backward pupils or ambitious teachers the vacation term can be eliminated and school attended four terms per year if deemed advisable.

The calendar as shown could be arranged to permit of the holidays and vacations as at present and provide a flexible and desirable schedule for pupils and teachers.

The optional vacation term falling, as it would, in any one of the four seasons, makes it possible for a pupil of the eighth grade, for instance, to take advantage of the more active business opportunities of

the winter term and make up the studies thus omitted during the less active summer season.

In answer to the argument raised as to the reluctance of pupils to attend school during the summer months, we include herein a statement taken from the "Annual Report of the City Superintendent of School Buildings," page 27, dated July 31, 1912:

VACATION SCHOOLS

<i>Item</i>	<i>1911</i>	<i>1912</i>	<i>Increase</i>
Number of Schools.....	32	33	1
Aggregate attendance	611,043	774,351	163,308
Average daily register	23,302	28,416	5,114
Average daily attendance.....	20,367	25,812	5,445
Number of class teachers.....	574	673	99

It will be noted that the average daily attendance was 25,812, or an increase of 5,445 over the preceding year.

The success of the vacation schools lead the City Superintendent of Schools to say in his last Annual Report:

"The success of these classes raises the question whether our summer vacation, which extends from the end of June until the second Monday in September, is not much too long. I believe it would be to the interest of all concerned, both pupils and teachers, if we shortened our summer vacation to one month, which should, of course, be July. In that event summer schools would become unnecessary, the Christmas holiday would become the natural dividing line between the two terms into which the school year is divided."

The change from "vacation schools" to regular sessions would not be so radical as some might suppose, considering these figures, and the fact that, in the plan proposed, but three-fourths of the pupils are required to attend in summer.

More efficient use of school buildings implies the use of all available spaces for educational purposes.

There are many instances in which waste of spaces quite suitable for instruction purposes were found but unused.

There are also instances, particularly in the newer schools, where auditoriums are provided occupying much space but, as designed, only available for occasional classes, and then not to the best advantage.

One class at a time is all that can be held efficiently in one space unless partitioned off.

We found in a former report dealing with plant efficiency that much

space otherwise useful for educational purposes was occupied by improperly designed and inefficiently placed boiler plants with their accessories.

In many cases more boilers than were necessary or desirable were installed and, in most cases, they were so distributed as to use far more space than should have been allotted.

With the more efficient use of the school buildings should come more efficient teaching methods. Modern sciences have given us many improved ideas and devices for efficiently and surely instilling knowledge into the minds of the pupils.

The daylight moving picture has made it possible to enjoyably and permanently impress the details of various subjects upon the memory of the child, at the same time holding its attention as no dry, drudging, and easily forgotten methods as used in our schools to-day could possibly accomplish. There are many other modern inventions which could be applied to instruction of the younger minds by a little ingenuity on the part of the educators, and greatly facilitate the processes of education as well as to conserve the space required.

That some such plan must be adopted is clear to all who realize that the introduction of shop work, vocational and trade training, domestic science, and elementary science will call for much more building space per pupil than is required for the ordinary course of study now in force in the elementary schools. The adoption of the plan suggested for sessions would make possible the introduction of these desirable practical occupations without making the building cost prohibitive.

NOTE—The following is quoted from Report of Edward L. Stevens, Associate City Superintendent, in Report on High Schools, 1912.

"Five years ago I ventured to suggest in my annual report to you that a time would come when we must have extended sessions and that the schools must be open a maximum amount of time each day. Below will be found a time schedule by which the capacity of any given school, for example, the Commercial High School in Brooklyn, where this scheme was worked out, may be nearly doubled. The study period will require the use of the assembly room as a study hall."

CONCLUSIONS

The fact that the schools have required in some cases eight to ten years for completion after the need becomes apparent is sufficient evidence that drastic measure must be taken to eliminate such wastes of time as can be done with the means at hand.

The suggestions and recommendations contained herein will do much to eliminate such wastes of time and money and will not require, as in

the case of most recommendations, an initial expenditure of any moment to put them into force.

The recommendations call for—

- 1—The selection of sites by scientific means;
- 2—The elimination of “useless formalities” by the establishment of a staff in the “Efficiency Bureau” of the Board of Estimate;
- 3—Foresight on the part of the Board of Education in designing and submitting for approval all plans of any one school at one time;
- 4—The adoption of “standard schools”;
- 5—Eliminating duplication of approval upon the same subjects by restricting each department to its charter duties;
- 6—The provision for efficient engineering within the designing department of the Board of Education;
- 7—The elimination of the “lowest bidder” problem by the establishment of the “Board of Censorship for Contractors”; and
- 8—The efficient use of the present equipment.

The total savings possible by the use of the recommendations will be, per school:

<i>Recommendation</i>	<i>Savings in Time</i>	<i>Financial Savings</i>
1	3 years	Inestimable
2	Inestimable	Inestimable
3	92 days	Inestimable
4	2 years	10 per cent. of cost
5	1 month	Inestimable
6	Inestimable but very valuable	5 per cent.
7	Inestimable	5 per cent.

The total building cost per year as calculated hereinbefore is \$5,975,755.73, of which 20 per cent. could be saved by the adoption of recommendations Nos. 4, 6, and 7, amounting to \$1,195,151.15, or nearly \$1,200,000 annually on construction cost alone.

The adoption of recommendations Nos. 1, 2, 3, and 5 will effect a saving that is impossible to estimate closely, but would certainly amount to several thousands of dollars per year in maintenance and architectural cost, in addition to saving expenses in other departments.

The above amounts do not include the reductions in architectural force, maintenance, or expenses in other departments obtainable by the adoption of all recommendations.

The above savings also do not include the invaluable advantages of

increased school capacity and the vast efficiency obtainable by modern methods.

Respectfully submitted,

CHARLES G. ARMSTRONG,

FRANCIS J. ARMSTRONG.

May 21, 1913.

EXPLANATORY NOTE

In compiling the foregoing report with the recommendations we have confined ourselves to the main issues; i. e., Why does it take longer to build a school building than a private building; and have endeavored to point out remedies for the grosser and more important causes.

REMEDIES SUGGESTED .

REPORT ON

NEW YORK PUBLIC SCHOOLS

DELAYS IN THEIR LOCATION, DESIGN
AND CONSTRUCTION

REMEDIES SUGGESTED

SECTION III

A.—DETAILED ILLUSTRATIVE DATA
B.—CHARTS AND EXHIBITS

CHARLES G. ARMSTRONG,
FRANCIS J. ARMSTRONG,
Consulting Engineers.

CITY OF NEW YORK
1911-1912

EXPLANATION OF DELAY IN AUTHORIZATION OF CORPORATE STOCK FOR SITES AND SCHOOL BUILDINGS, IN APPROVAL OF PLANS, ETC.

TABLE—I

On account of the panic during the Fall of 1907 the Board of Estimate and Apportionment sought to conserve the City's interests by requesting, December 6, 1907, all heads of departments not to incur any new liability against funds already authorized until reapproved by the Board of Estimate. One week after adopting this resolution the Board of Estimate excepted the Board of Education from the provisions thereof. In practice, however, the Board of Education only took advantage of this exception with respect to buildings already under construction, and did not commence new construction work unless reauthorized by the Board of Estimate.

On account of the dispute with respect to the computation of the debt limit for New York City an injunction suit was brought in the Fall of 1908 to determine the proper method of calculating the debt. Pending this action, the Board of Estimate, again seeking to conserve the City's interests and to avoid any possibility of exceeding the debt limit, requested the heads of City Departments not to enter into new corporate stock obligations unless reapproved by the Board of Estimate. This resolution was adopted December 18, 1908, and did not except therefrom the Board of Education.

After the debt limit case had been decided in the summer of 1909 the Board of Estimate and Apportionment and the Board of Aldermen authorized \$6,699,010.00 corporate stock for additional school facilities for the Board of Education. Mayor McClellan vetoed this entire amount December 28, 1909, on the ground that it was improper for him on the eve of retiring from office to tie the hands of the new administration to this large extent in the matter of corporate stock authorizations.

The new administration immediately on assuming office determined to make a comprehensive investigation and study of corporate stock authorizations before obligating the City further for capital improvements. The necessity for such a study, involving the needs of all City Departments, had been clearly evidenced by the panic of 1907 and the debt limit case of 1908 and 1909. The result of this study, when, for the first time in the history of the City, all the needs of the City were

weighed against each other, was the adoption early in June, 1910, of the first corporate stock budget of the City of New York. During the year 1910 the Board of Estimate authorized \$6,007,753.99, rescinded \$1,352,700.02, making a net authorization for the first year of its administration of \$5,255,053.07 for the Board of Education. The Board of Estimate for the first time studied past authorizations and expenditures and, as a result, determined to rescind all authorizations, of which there remained a balance after the purpose of the authorization had been met, or all authorizations which were not needed.

Therefore these rescindments were made in order that the City's credit might be utilized for other improvements which were urgently needed.

During the study of the corporate stock budget of 1911 the Board of Estimate based its conclusions for a net authorization of \$12,231,338.00 for the Board of Education upon a study of population in co-operation with the Permanent Census Board and the Board of Education.

The investigation of the Department of Finance in 1904 disclosed the fact that many sites purchased by the Board of Education were lying unused. As a result the City was losing the taxes which would have been collected from a private owner as well as the interest and sinking fund on the purchase price. Besides, the City was obliged to buy sites for buildings which were unquestionably needed, although funds were sunk in these sites in localities where there was no need, and the Board of Education has only in rare instances surrendered unused sites, improved and unimproved, to the Commissioners of the Sinking Fund.

This led the Department of Finance to report that it was unwise to purchase sites in advance of their actual need. The reports of the Committee on Vacant Lands of the Sinking Fund Commission, dated July 15, 1911, and February 3, 1912, similarly recommend that the City should discontinue purchases in advance of the acquisition of information showing actual need.

EXPLANATIONS OF DELAY AND ITEMS OF GENERAL INFORMATION REGARDING SCHOOL BUILDINGS AND SITES

COLUMN I—"A"—ADDITION TO BOYS' HIGH SCHOOL

The Board of Estimate authorized construction funds June 5th, 1908—378 days after the first request by the Board of Education. The panic in the Fall of 1907 contributed probably to this delay. After the first authorization, 728 days elapsed before reauthorization June 3, 1910, during which period the reasons for further delay were:

TABLE 1 Part I

Dates showing
Important Stages in the
Selection and Acquisition
of Sites and in the
Construction and Equipment
of School Buildings

	Boys H.S. addition Washington Irving H.S. PS. 168 Brooklyn PS. 171 Brooklyn PS. 47 Bronx PS. 40 Queens PS. 61 Man. Bushwick H.S. PS. 132 Man. add. PS. 80 Bronx PS. 79 Man. Normal College PS. 92 Queens PS. 43 Bronx add. PS. 39 " " PS. 173 Brooklyn PS. 174 " " PS. 72 Man. PS. 28 Brooklyn add.																			
Date local School Board, Board of Sup'ts or body of citizens first report need of site for a School.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Board of Education selects Site.	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65
Board of Estimate authorizes purchase or condemnation of Site.	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65	3/65
Date Title to last parcel vests.	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27	2/27
Board of Education first requests funds for construction of Building.	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23	5/23
Board of Estimate authorizes funds for construction.	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10
Board of Education approves general construction plans.	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29	12/29
Board of Estimate approves general construction plans.	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31
Board of Education sent to printer Heating and Ventilating Specifications.	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12
Dept. of finance receives from board of Education Heating and Ventilating Plans	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27	6/27
Board of Estimate or comptroller approves Heating and Ventilating Plans.	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13	7/13
Dept. of W.S.G.+E. receives Elect. Plans.	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15	7/15
Board of Estimate approves Electric Plans.	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31
Dept. of finance receives furniture Plans	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31
Board of Estimate or Comptroller approves Furniture Plans.	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31	10/31

TABLE 1 Part II

Number of Days Spent in the
Selection and Acquisition of
Site in the Authorization of
Funds for Construction of Buildings
and Purchase of Equipment in approval
of plans and Specifications etc for
Public Schools

	Boys H.S. addition Washington Irving H.S. PS. 168 Brooklyn PS. 171 " " PS. 47 Bronx. PS. 40 Queens. PS. 61 Man. Bushwick H.S. PS. 132 Man. add. PS. 80 Bronx PS. 79 Man. Normal College PS. 92 Queens PS. 43 Bronx add. PS. 39 " " PS. 173 Brooklyn PS. 174 " " PS. 72 Man. PS. 28 Brooklyn add.																			
No. of days between first report of need by local School Board, Board of Sup'ts, etc. and selection of Site by Board of Education.	431	342	167	477	244	961	243		239	732	300		158	187	1805	269	1860	503		
No. of days between selection of site by Board of Education and authorization of purchase or condemnation by Board of Estimate and Department.	2	9	870	105	16	19	182		50	16	126		344	1625	7	70	764			
No. of days between authorization of purchase or condemnation by Board of Est. and Vesting of Title.	212	872	99	213	457	181		516	63	49		219	47	466	42					
No. of days between Vesting and first request of funds for construction of Building.	145	205	53	146	395	146	124		323	143	32		334	107	1024	302				
No. of days between first request of funds for construction of Building and authorization of funds by Bd of Est. and Dep.	373	303	935	345	1077	440	271		65	1443	2	106	138	147	161	161				
No. of days between authorization of funds for construction of building and approval of general construction Plans by Bd of Ed.	564	823	172	219	164	247		338	419	77	523	1302	40	277	101	148	148	200		
No. of days between approval of general construction plans by Bd of Ed. and their approval by Bd of E.+A. or Comptroller.	128	70	36	80	69	56	49		638	71	77	94	81	113	84	35	63			
No. of days between approval of general construction plans by Bd. of Ed. and transmission of Heating and Vent. plans to printer.	501	397	176	167	187	137	264		1175	336	976	169	373	313	356	374	309	217		
No. of days between approval of general construction plans by Bd of E.+A. and receipt of H.V. plans by Dept. of Finance.	241	123	143	234	180	233	446		306	169	120	378	246	252	231	197	161			
No. of days between receipt of Heating and Ventilating plans by Dept. of Finance and their approval by Bd of E.+A. or Comptroller.	16	36	12	10	102	36	15		12	30	15	12	26	73	17	14	23	41	52	
No. of days between approval of general construction plans by Bd of E.+A. and receipt of Electrical plans by Dept. of W.S.G.+E.	232	171	145	232	178	327	418		221	301	209	245	121	242	236	216	167			
No. of days between receipt of Electrical plans by Dept. of W.S.G.+E. and their approval by Bd. of E.+A. or Comptroller.	71	26	47	38	98	86	83		63	65	47	86	98	71	124	31	37	42	54	
No. of days between approval of Electrical plans by Bd of E.+A. and receipt of Furniture plans by Dept. of Finance.	14	121	184	157	49	53		55	13	61		19	19							
No. of days between receipt of Furniture plans by Finance Dept. and their approval by Bd. of E.+A. or Comptroller.	22	60	114	19	24		28		11	10		51	12							

- (a) Debt limit injunction case.
- (b) Change of administration, involving veto by retiring Mayor and necessity for study by new administration.

Specifications were printed December 31, 1909, but because of (b) the Building Committee of the Board of Education ordered that all bids for the work be returned to bidders without having been opened, which was done.

The plans and specifications contemplated very extensive alterations and improvements in the old building. In fact, the practical rebuilding of the westerly half, and the letting of the contract had been timed for January in order that the Contractor might proceed with certain work on the new addition, so that the westerly portion of the old building might be underpinned and work properly advanced in the interior during vacation.

Unofficial notice was received early in June, 1910, that authority had been granted by the Board of Estimate and Apportionment for advertisement of work, and these bids were opened on June 27, 1910. This threw the work behind so that avoidance of interference with school sessions was impossible.

A long delay was caused early in 1911 by neglect of the builder to supply proper brick, the matter being before the Building Committee of the Board of Education on February 19th of that year.

Early in November there was declared a sheet metal strike which was not settled until February of this year. This made it impossible to finish roof of the building or complete the sheet metal duct work.

COLUMN 1—"B"

An estimate of increased furniture cost was lost about fifty-five days in the Department of Finance.

On September 28, 1912, the Addition was not entirely complete.

WASHINGTON IRVING HIGH SCHOOL

COLUMN 2—"A"

The Board of Estimate on March 20, 1908, authorized construction funds 303 days after the first request by the Board of Education. The panic undoubtedly contributed to this delay. After this first authorization 720 days elapsed before reauthorization, March 11, 1910, during which period the further delay was due to

- (a) Debt limit injunction case.
- (b) Change of administration, involving the veto of the retiring Mayor and the need for study by the new administration.

COLUMN 2—"B"

The Bureau of Buildings, Manhattan, wasted 23 days on disapproval of one item, which was eventually waived by the Bureau of Buildings, Manhattan.

On September 28, 1912, the building was nearly completed.

PUBLIC SCHOOL NO. 168—BROOKLYN

COLUMN 3—"A"

The Board of Estimate authorized construction funds April 8, 1910, 345 days after the first request by the Board of Education. A further delay of 28 days was due to the discovery in the Board of Aldermen that a smaller amount had been requested for several buildings, in a later request of the Board of Education than in the earlier request as passed by the Board of Estimate and Apportionment.

This necessitated amendment by the Board of Education and Board of Estimate.

Public School No. 168 was occupied September, 1912.

The interval between first mention of need and completion of building was six years.

PUBLIC SCHOOL NO. 171—BROOKLYN

COLUMN 4—"A"

See Column 3—"A" note on Public School No. 168, Brooklyn.

COLUMN 4—"B"

Request for a site for Public School No. 171 came after the discovery by the Department of Finance of the useless purchase of sites in advance of their need. This made a careful study of the movement of population necessary, so that this site might not be added to the long list of unused sites which eventually would have to be given to the Sinking Fund Commission.

During the first year, after the selection of a site by the Board of Education, a brick building was erected on the plot. At that time, the Department of Finance was considering several alternative sites. The Board of Education chose a second site 807 days after their first choice, and of this the Board of Estimate authorized the purchase in 30 days. See Map 1.

A sheet metal strike delayed construction.

Public School No. 171 was occupied September, 1912. The interval between the first mention of need and occupation was over ten years.

PUBLIC SCHOOL NO. 47—BRONX

COLUMN 5—"A"

Funds for construction were first requested by the Board of Education before the streets were laid out or the sewers put in. Why the Board of Education did not renew its request of June 13, 1906, in its statement of corporate stock requirements of February 3, 26, April 8, and May 13, 1908, is, therefore, easily understood. In October, 1909, the Board of Estimate authorized funds, but the retiring Mayor vetoed.

In the revision of the corporate stock requirements submitted April 27, 1910, the Board of Education did not include this building as among most urgent needs. However, July 29, 1910, the Board of Estimate authorized construction funds.

General Construction

Specifications were printed February 4, 1911, and bids opened April 17, 1911. Delay caused by inability to obtain right of way to the street upon which the property fronted.

The general construction contract was approved in May, 1911, and it was not until November, 1911, that the heating and ventilating specifications were printed and submitted to the Department of Finance for approval, and not until May, 1912, or one year after the general construction contract was awarded, that the heating and ventilating contract was given out. At this time the building was about one-half completed.

The electrical work was almost as far behind. When such a condition exists it is impossible to avoid confusion and expense caused by almost certain lack of correlation between the plans.

See Department of Water Supply, Gas and Electricity exhibit for criticisms of method of submission of plans by Board of Education.

On September 28, 1912, the trim, hardware, wardrobes and general finishing were being put on.

PUBLIC SCHOOL NO. 40—QUEENS

COLUMN 6—"A"

The Board of Estimate authorized funds for construction October 29, 1909, 183 days after the first request. The change in administration caused the retiring Mayor to veto, so that the hands of the new administration would not be tied. After study, the new administration authorized funds in the first corporate stock budget passed June 3, 1910.

COLUMN 6—"B"

The two and one-half months elapsing between February 6, 1911, and April 21, 1911, was consumed in the Finance Department and the Department of Water Supply, Gas and Electricity for the addition of a water meter in the specifications.

The time between the printing of specifications, February 2, 1911, and opening of bids, May 1, 1911, was due to change in the sewer plans.

The time between May 18, 1911, and June 7, 1911, was consumed in the Department of Finance in approving the form of contract during which time "the amount of liquidated damages for the several items" was inserted.

The time between November 27, 1911, and December 29, 1911, i. e., between transmission of plans and approval was consumed in the Department of Finance in inserting in the electrical contract, the "amount of liquidated damages" which would ordinarily take about 15 minutes.

PUBLIC SCHOOL NO. 61—MANHATTAN

COLUMN 7—"A"

See Column 3—"A", Public School No. 168, for explanation of two authorizations by the Board of Estimate. One month's time was taken in the approval of plans by the Bureau of Buildings, Manhattan, the main objection to which was eventually waived by the Bureau of Buildings.

Twenty-seven days were wasted by the failure of the Superintendent of School Buildings to notify the Department of Highways that an unofficial report was not sufficient.

Thirty days were spent by the Chief Engineer of the Finance Department in amending specifications and plans "so as to show the construction of floor arches, hollow brick, and terra cotta lining to outside walls, and the erection of additional fence wall on westerly side of property. A correction was also made in the numbering of the piles," which was beyond the jurisdiction of the Department of Finance.¹

Between the printing of specifications, April 6, 1911, and the opening of bids, June 19, 1911, a delay was caused by unsafe walls on adjacent property.²

BUSHWICK HIGH SCHOOL—BROOKLYN

COLUMN 8—"A"

The Board of Education requested funds for a new high school building in Brooklyn in general terms February 26 and March 11, 1908,

¹ See letters hereto attached and Exhibit 2 of the Department of Finance, statements concerning Public School No. 61, Manhattan.

² See explanatory notes from Board of Education, Public School No. 61, Manhattan.

before a site had been selected, but a request for this high school was not included in statements of corporate stock needs submitted during 1908 and 1909. Early in 1910 the matter was brought to the attention of the Board of Estimate and funds were immediately authorized.

COLUMN 8—"B"

The building was complete to roof in August, 1912, but heating and ventilating bids were not yet advertised. Construction contractors were at a standstill until heating and ventilating and electrical contracts were let.

COLUMN 8—"C"

Three months were wasted by the Department of Water Supply, Gas and Electricity in refusing an electric generating plant, which refusal is foreign to the powers of this Department. See Exhibit "C"—Part 4.

ADDITION—PUBLIC SCHOOL NO. 132—MANHATTAN

COLUMN 9—"A"

Funds for the Addition to Public School No. 132 were included 182 days after the first request of the Board of Education in the authorization of corporate stock by the Board of Estimate, which was vetoed by the Mayor because of the change in administration. When the Board of Education submitted its revision of the corporate stock estimate, April 27, 1910, limiting itself to immediate necessities, this addition was not included.

In the 1911 corporate stock estimate it was considered urgent, and funds were authorized two months later by the Board of Estimate.

ADDITION—PUBLIC SCHOOL NO. 20—BRONX

COLUMN 10—"A"

On July 12, 1912, the Building Committee of the Board of Education approved the final construction plans and, on May 15, 1912, the manuscript of heating and ventilating specifications were sent to the printer.

On September 28, 1912, the addition was complete except for some partitions and stairs.

ADDITION—PUBLIC SCHOOL NO. 78—MANHATTAN

COLUMN 11—"A"

Funds for the addition to Public School No. 78 were included 182 days after the first request of the Board of Education in the authoriza-

tion of corporate stock by the Board of Estimate which was vetoed by the Mayor because of the change in administration. When the Board of Education submitted its revision of the corporate stock estimate April 27, 1910, limiting itself to immediate necessities, this addition was not included. In the 1911 corporate stock estimate it was considered urgent and funds were authorized a month later.

COLUMN 11—"B"

Thirty-seven days of approval in the Highways Department was due to neglect by the Board of Education.

COLUMN 11—"C"

When heating and ventilating contract was awarded the general construction was approximately 23 per cent. completed.

PUBLIC SCHOOL NO. 45—BRONX

COLUMN 12—"A"

The Board of Education requested funds in May, 1907.

Delay in their authorization by the Board of Estimate was due to

- (a) Panic in the Fall of 1907.
- (b) The revision of the corporate stock request of 1908 by the Board of Education limiting it to urgent needs did not include this school.
- (c) Change in administration caused the Mayor to veto the authorization of the Board of Estimate of October, 1909.
- (d) The revision of the corporate stock request of 1910 limiting it to most urgent needs did not include this school. Funds were authorized by the Board of Estimate soon after a study of the corporate stock budget for 1911 disclosed the need.

Heating and ventilating contract given out March 12, 1912, at which time building was 20 per cent. completed.

Building on September 28, 1912, was completed to four stories and three stories of partitions.

NORMAL COLLEGE—MANHATTAN

COLUMN 13

On September 28, 1912, three floors of sleepers were in and structural work was being put in.

PUBLIC SCHOOL NO. 92—QUEENS

COLUMN 14—"A"

The Board of Estimate and Apportionment authorized funds two days after they were requested. The award of the contract was not made promptly by the Board of Education and it was therefore held up by the debt limit injunction case.

A year later the Board of Education requested additional funds in order to erect a 48-room instead of a 24-room building, as originally planned. The Board of Estimate and Apportionment approved this after 183 days, but the change in administration caused the Mayor to veto.

Before the Mayor's veto the Board of Education had awarded the contract, December 22, 1909, pending financial ability, but because the Board of Education wished to rescind the contract the contractor brought suit. The corporation counsel wrote the Board of Education eleven months later, November 26, 1910, that the contract was null and void, since the additional appropriation had never been made. The Board of Education then decided to use the appropriation of April 24, 1908, in erecting a 24-room building.

One set of preliminary plans and three sets of final plans were drawn contemplating three different constructions.

On September 28, 1912, plastering was finished and rough floors were laid.

From first mention of need to date, building incomplete, eleven years.

PUBLIC SCHOOL NO. 43—BRONX

COLUMN 15

On September 28, 1912, plastering was finished, tiling and trim were being installed.

ADDITION—PUBLIC SCHOOL NO. 39—BRONX

COLUMN 16—"A"

The Board of Education first requested funds for an Addition May 22, 1907. Delay in authorization by the Board of Estimate was due to

- (a) The panic in the Fall of 1907.
- (b) The revision of the corporate stock request of 1908 limiting requests to immediate needs did not include this addition.
- (c) The debt limit injunction case (1908-1909).
- (d) Change in administration caused the Mayor to veto the authorization of the Board of Estimate of October, 1909.

- (e) The revision of the 1910 corporate stock request limiting it to immediate needs, did not include this addition. The Board of Estimate authorized funds 107 days after a special request of the Board of Education presented November 23, 1910.

On September 28, 1912, the third tier beams were set and floor anchors were being set in.

PUBLIC SCHOOL NO. 173—BROOKLYN

COLUMN 17

On November 19, 1909, the City Superintendent reported great need of a school between public schools Nos. 63 and 149, Brooklyn. On September 28, 1912, or nearly three years later, the building was still incomplete.

August 3, 1911, the final plans were completed and submitted.

October 11, 1911, an additional strip of land was selected and purchased January 10, 1912. Building covers plot fully. See Plate "C." Evidently the plans were drawn by the Board of Education, so that the extra plot had to be purchased regardless of price.

Building incomplete on September 28, 1912.

PUBLIC SCHOOL NO. 174—BROOKLYN

COLUMN 18—"A"

The Board of Education first requested funds for a site for this building October 24, 1906. Delay in authorization by the Board of Estimate was due to

- (a) The investigation of the Department of Finance into the number of unused sites and their belief in the unwisdom of purchasing before actual need.
- (b) The panic in the Fall of 1907.
- (c) Question as to where the site should be located.
- (d) The debt limit injunction case.
- (e) Change in administration, involving study by the new administration before authorizing funds.
- (f) Report of the Permanent Census Board showed need and funds were granted in April, 1911. On September 28, 1912, structural work was commenced.

ADDITION—PUBLIC SCHOOL NO. 72—MANHATTAN

COLUMN 19—"A"

On June 17, 1910, the Board of Superintendents reported that "the necessity for using the following sites in the list you have submitted is

so distant that we do not feel able to assign them any order of priority: East 105th Street, adjoining Public School No. 72—Manhattan."

Notwithstanding this the Board of Education requested funds for this addition in the 1911 corporate stock budget and received an authorization therefor from the Board of Estimate and Apportionment.

On September 28, 1912, the second tier beams were set on the second story wall.

ADDITION—PUBLIC SCHOOL NO. 28—BROOKLYN

COLUMN 20—"A"

Bids for general construction were opened July 1, 1912, while the electric, heating and ventilating plans were not yet submitted October 9, 1912.

On September 28, 1912, excavations and shoring were being accomplished.

"A"

DETAILED ILLUSTRATIVE DATA

The following pages contain the detailed data obtained on the various schools and from the various city departments as well as correspondence and miscellaneous matter too voluminous to be included in the foregoing pages.

In the detailed data of each school all items marked—

- *—Represent dates obtained from the Board of Education and not considered of sufficient importance to corroborate.
- **—Represent dates as given by the Board of Education and found by actual inspection of contracts to be incorrect.
- ***—Represent dates obtained from Board of Education and not checked through lack of record in the Department of Finance.

ADDITION TO BOYS' HIGH SCHOOL—BROOKLYN

DATA PRELIMINARY TO BUILDING DESIGN

Addition was built on the original site

May 22, 1907—Board of Education requested of Board of Estimate and Apportionment authorization of \$380,000 corporate stock for an addition.

Sept. 25, 1907 }—Board of Education requested of Board of Estimate
Feb. 3, 1908 } and Apportionment \$350,000 for an addition.

Feb. 26, 1908—Board of Education requested of Board of Estimate and Apportionment \$400,000 for an addition.

- June 5, 1908—Board of Estimate and Apportionment authorized \$400,000 corporate stock for an addition.
- June 23, 1908—Board of Aldermen approved.
- June 30, 1908—Mayor approved.
- Apr. 28, 1909—Board of Education requested release of above authorization from resolution of Board of Estimate and Apportionment of December 18, 1908, directing heads of Department to incur no further obligations because of the debt limit injunction case.
- Mar. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$100,000 for equipment.
- June 3, 1910—Board of Estimate and Apportionment released \$378,000 corporate stock from resolution of January 14, 1910, directing heads of Departments to incur no further obligations.
- Board of Estimate and Apportionment authorized \$100,000 for equipment of addition.
- June 28, 1910—Board of Aldermen approved.
- July 19, 1910—Mayor returned without approval or disapproval.
- Jan. 26, 1911—Board of Estimate and Apportionment authorized \$49,086 for furniture work.

GENERAL CONSTRUCTION

- Apr. 8, 1909—Art Commission received preliminary construction plans.
- Apr. 13, 1909—Art Commission approved preliminary construction plans.
- Apr. 22, 1909—Art Commission certified action.
- Apr. 26, 1909—Board of Education received final approval of Art Commission.
- Dec. 6, 1909—Final plans submitted to Art Commission.
- Dec. 8, 1909—Manuscript of specifications sent to printer.
- Dec. 13, 1909—Plans approved by Building Committee of the Board of Education.
- Dec. 14, 1909—Art Commission postponed action for lack of sufficient information.
- Dec. 17, 1909—Plans filed with Bureau of Buildings, Brooklyn.
- Dec. 22, 1909—Board of Education approved general construction plans.
- Dec. 22, 1909—Final proof of construction specifications sent to printer.
- Dec. 23, 1909—Bureau of Buildings, Brooklyn, examined construction plans.
- Dec. 27, 1909—Additional information received by Art Commission.

- Dec. 28, 1909—Art Commission postponed action requesting Mr. Snyder's presence at next meeting.
- Dec. 28, 1909—Bureau of Buildings, Brooklyn, notified Board of Education that plans were ready for correction.
- Dec. 31, 1909—Specifications printed.
- Jan. 4, 1910—Structural application again filed with Bureau of Building, Brooklyn.
- Jan. 4, 1910—Bureau of Buildings, Brooklyn, approved structural plans.
- Jan. 4, 1910—Structural plans advertised for bids.
- Jan. 5, 1910—Permit No. 52/10 issued authorizing construction by Bureau of Buildings, Brooklyn.
- Jan. 10, 1910—Board of Education acknowledged receipt of permit.
- Jan. 11, 1910—Art Commission approved structural plans.
- Jan. 17, 1910—Art Commission certified action.
- Jan. 18, 1910—Board of Education acknowledged approval of Art Commission.
- June 27, 1910—Bids opened.
- July 1, 1910*—Assistant Engineer of the Department of Finance received plans.
- July 13, 1910—Board of Education approved contract.
- July 22, 1910—Board of Estimate and Apportionment approved of contract.
- Aug. 5, 1910—Actual date of contract.
- Aug. 26, 1910**—Department of Finance approved of contract subject to financial ability.

PLUMBING AND DRAINAGE

- Dec. 17, 1909—Plumbing and drainage plans filed with Bureau of Buildings, Brooklyn.
- Dec. 28, 1909—Bureau of Buildings, Brooklyn, examined plumbing and drainage plans.
- Dec. 28, 1909—Board of Education was notified by Bureau of Buildings, Brooklyn, that plumbing and drainage plans were ready for correction.
- Dec. 29, 1909—Bureau of Buildings, Brooklyn, approved plumbing and drainage plans.

HEATING AND VENTILATING

- June 3, 1910—Board of Estimate and Apportionment appropriated \$100,000 for heating and ventilating.
- June 28, 1910—Board of Aldermen approved appropriation.
- July 19, 1910—Received from Mayor without approval or disapproval.

- June 27, 1911—Heating and ventilating plans sent to the Department of Finance.
- June 28, 1911—Assistant Engineer of the Department of Finance received heating and ventilating plans.
- July 1, 1911—Department of Finance approved heating and ventilating plans.
- July 13, 1911—Board of Estimate and Apportionment approved heating and ventilating plans.
- July 31, 1911—Board of Education acknowledged receipt of approval from Department of Finance.
- July 31, 1911—Heating and ventilating bids opened.
- Jan. 11, 1912*—Additional heating and ventilating plans filed in the Department of Finance.
- Jan. 15, 1912—Assistant Engineer of the Department of Finance received heating and ventilating additional plans.
- Jan. 22, 1912—Department of Finance reported upon the additional heating and ventilating plans.
- Feb. 8, 1912—Board of Estimate and Apportionment approved of additional plans.
- Feb. 19, 1912—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment of additional plans.
- Feb. 28, 1912—Board of Education awarded contract for heating and ventilating.
- Mar. 8, 1912—Contract for heating and ventilating filed with the Department of Finance.
- Mar. 18, 1912—Actual date of contract for heating and ventilating.

ELECTRIC

- June 3, 1910—Board of Estimate and Apportionment appropriated \$100,000 for electrical equipment.
- June 28, 1910—Board of Aldermen approved \$100,000 appropriation.
- July 19, 1910—Received from Mayor without approval or disapproval.
- July 1, 1911—Manuscript of electrical specifications sent to printer.
- July 15, 1911—Board of Education acknowledge transmission of electrical plans to the Department of Water Supply, Gas and Electricity.
- Aug. 2, 1911—Received by Department of Water Supply, Gas and Electricity.
- Aug. 18, 1911—Department of Water Supply, Gas and Electricity approved electrical plans.
- Aug. 21, 1911—Final proof of electrical specifications sent to printer.
- Aug. 24, 1911—Electrical specifications printed.

- Aug. 30, 1911—According to Board of Education electrical plans were sent to the Department of Finance.
- Aug. 31, 1911—Date of transmission of above by the Board of Education.
- Sept. 1, 1911—Assistant Engineer of the Department of Finance received electrical plans.
- Sept. 27, 1911—Department of Finance approved electrical plans.
- Oct. 2, 1911—Bids for electrical work opened.
- Oct. 5, 1911—Board of Estimate and Apportionment approved electrical plans.
- Oct. 9, 1911*—Additional electrical plans filed with the Department of Finance.
- Oct. 17, 1911—Board of Education acknowledged receipt of electrical plans from the Department of Finance.
- Nov. 29, 1911—Board of Education awarded electrical contract.
- Dec. 6, 1911—Contract for electrical work filed in the Department of Finance.
- Dec. 11, 1911—Actual date of contract.
- Dec. 15, 1911**—Contract for electrical work approved by the Department of Finance.

FURNITURE

- Sept. 23, 1911—Manuscript of furniture specifications sent to printer.
- Oct. 11, 1911—Final proof of furniture specifications sent to printer.
- Oct. 16, 1911—Specifications for furniture printed.
- Oct. 19, 1911—Furniture plans sent to the Department of Finance.
- Oct. 21, 1911—Assistant Engineer of the Department of Finance received furniture plans.
- Nov. 16, 1911—Department of Finance approved furniture plans.
- Nov. 23, 1911—Board of Estimate and Apportionment approved furniture plans.
- Dec. 5, 1911—Board of Education acknowledged approval of Department of Finance.
- Dec. 11, 1911—Furniture bids opened.
- Dec. 13, 1911—Board of Education approved furniture bids.
- Jan. 3, 1912—Furniture having been increased, extended cost was sent to the Department of Finance.
- Jan. 10, 1912*—Department of Finance approved contract.
- Feb. 28, 1912—Extended cost, lost in Department of Finance, was received by Assistant Engineer.
- Mar. 3, 1912—Extension approved by Department of Finance.
- Mar. 14, 1912—Board of Estimate and Apportionment approved furniture extension.
- Mar. 28, 1912—Manuscript of additional specifications sent to printer.

- Apr. 15, 1912—Final proof of additional specifications sent to printer.
- Apr. 19, 1912—Additional specifications printed.
- Apr. 23, 1912—Final furniture extension sent to Department of Finance.
- Apr. 24, 1912—Department of Finance acknowledged transmission.
- Apr. 26, 1912—Assistant Engineer of the Department of Finance received final extension.
- May 3, 1912—Department of Finance approved furniture extension.
- May 23, 1912—Board of Estimate and Apportionment approved furniture extension.
- June 1, 1912—Board of Education received final furniture extension approved from Board of Estimate and Apportionment.
- June 10, 1912—Bids opened for furniture.

WASHINGTON IRVING HIGH SCHOOL—MANHATTAN

DATA PRELIMINARY TO BUILDING DESIGN

- Mar. 7, 1905—Board of Aldermen requested Board of Education to secure a site for a high school in the area bounded by 14th Street, 7th Avenue, 34th Street, and North River.
- Mar. 22, 1905—Board of Education referred above request to Committee on High Schools.
- Apr. 24, 1905—Committee on High Schools requested Committee on Sites to procure a site for a new high school.
- May 23, 1906—Board of Education selected site at Irving Place, East 16th Street, and East 17th Street, assessed value \$404,500.
- May 25, 1906—Board of Estimate and Apportionment authorized purchase at private sale for not more than \$675,000.
- July 31, 1906—Title to first parcel vested in city.
- Feb. 27, 1907—Title to last parcel vested in city.
- May 22, 1907—Board of Education requested of Board of Estimate and Apportionment \$650,000 for construction of a new building.
- Sept. 25, 1907 } —Board of Education requested of Board of Estimate and Apportionment \$600,000 for erection of
- Feb. 3, 1908 } new building.
- Mar. 11, 1908 }
- Mar. 20, 1908—Board of Estimate and Apportionment authorized \$600,000 for erection of new building.
- Mar. 24, 1908—Board of Aldermen approved.
- Apr. 1, 1908—Mayor approved.

- Apr. 28, 1909—Board of Education requested of Board of Estimate and Apportionment re-approval of authorization of \$600,000 because of restriction of resolution of Board of Estimate of December 18, 1908, due to debt limit injunction case.
- Nov. 12, 1909—Board of Estimate and Apportionment re-approved authorization of \$600,000.
- Nov. 24, 1909—Board of Education approved of erection of eight-story building instead of six stories previously planned.
- Dec. 8, 1909—Board of Education requested of Board of Estimate and Apportionment \$300,000 additional for erection of building.
- Mar. 7, 1910—Superintendent of Building submitted to Comptroller report estimating total cost of construction and equipment at \$1,131,106.00.
- Mar. 11, 1910—Board of Estimate and Apportionment re-approved authorization of \$600,000 and authorized \$531,106 additional for erection and equipment of school, aggregating \$1,131,106.00.

GENERAL CONSTRUCTION

- July 3, 1908—Preliminary construction plans submitted to Art Commission.
- July 29, 1908—Art Commission approved preliminary construction plans.
- Aug. 4, 1908—Art Commission certified action.
- May 9, 1910—New preliminary construction plans submitted to the Art Commission by the Board of Education.
- May 10, 1910—Art Commission approved new preliminary plans.
- May 14, 1910—Art Commission certified action.
- June 20, 1910—Building Committee of the Board of Education approved general construction plans.
- June 22, 1910—Board of Education approved construction plans.
- June 30, 1910—Final construction plans submitted to Art Commission.
- July 6, 1910—Art Commission approved final construction plans.
- July 12, 1910—Art Commission certified action.
- Aug. 6, 1910—Application for general construction filed with Bureau of Buildings, Manhattan.
- Aug. 15, 1910—Bureau of Buildings disapproved application.
- Aug. 18, 1910—Manuscript of specifications for general construction sent to printer.

- Aug. 20, 1910—Board of Education filed an amendment with the Bureau of Buildings, Manhattan.
- Aug. 31, 1910—Bureau of Buildings, Manhattan, disapproved amendment.
- Sept. 2, 1910—Board of Education re-filed amendment with Bureau of Buildings, Manhattan.
- Sept. 6, 1910—Final proof of specifications for general construction sent to printer.
- Sept. 8, 1910—Bureau of Buildings, Manhattan, again disapproved amendment.
- Sept. 12, 1910—Bureau of Buildings, Manhattan, waived objection to amendment and application was approved.
- Sept. 13, 1910—Specifications for general construction printed.
- Oct. 2, 1910—Board of Education submitted plans to Department of Finance.
- Oct. 10, 1910—Bids for general construction opened.
- Oct. 13, 1910—Board of Education approved contract for general construction.
- Oct. 14, 1910—Assistant Engineer of the Department of Finance received construction plans.
- Oct. 25, 1910—Department of Finance approved construction plans.
- Oct. 28, 1910—Board of Estimate and Apportionment approved construction plans.
- Nov. 5, 1910—Contract filed in the Department of Finance.
- Nov. 23, 1910—Actual date of contract.
- Nov. 29, 1910**—Department of Finance approved contract for general construction according to the Board of Education.

HEATING AND VENTILATING

- July 24, 1911—Manuscript of heating and ventilating plans sent to printer.
- Aug. 8, 1911—Final proof of specifications for heating and ventilating sent to printer.
- Aug. 12, 1911—Plans were again filed with the Department of Finance according to the Board of Education.
- Aug. 12, 1911—Specifications printed.
- Aug. 15, 1911—Assistant Engineer of the Department of Finance received heating and ventilating plans.
- Aug. 16, 1911—Plans for heating and ventilating filed in the Department of Water Supply, Gas and Electricity.
- Sept. 5, 1911 (NOTE)—Heating and ventilating plans were filed with the Department of Finance according to the Board of Education.

- Sept. 5, 1911—Heating and ventilating bids opened.
 Sept. 11, 1911—Department of Finance approved heating and ventilating plans.
 Sept. 11, 1911—Comptroller approved heating and ventilating plans.
 Sept. 13, 1911—Board of Education approved heating and ventilating plans.
 Sept. 15, 1911—Department of Water Supply, Gas and Electricity approved heating and ventilating plans.
 Oct. 7, 1911—Board of Education acknowledged receipt of approval of heating and ventilating plans from the Department of Finance.
 Oct. 9, 1911—Contract filed in the Department of Finance.
 Oct. 17, 1911—Actual date of contract.
 Oct. 25, 1911**—Department of Finance approved contract for heating and ventilating.

NOTE—Records of the Department of Finance show above date of September 5 to be September 18 and applying to electrical elevator, ash hoist, etc., and above date of October 7 to be October 5, and to apply to approval by Board of Estimate and Apportionment of electric elevator, hoist, etc.

ELECTRIC

- June 6, 1911—Manuscript of electrical specifications sent to printer.
 June 17, 1911—Board of Education acknowledged transmission of electrical plans and specifications to the Department of Water Supply, Gas and Electricity.
 June 20, 1911—Department of Water Supply, Gas and Electricity received electrical plans.
 June 27, 1911—Board of Education acknowledged transmission of plans and specifications for electrical equipment to the Department of Finance.
 June 28, 1911—Date of transmission of plans and specifications for electrical work to Department of Finance.
 June 28, 1911—Department of Water Supply, Gas and Electricity approved electrical plans.
 June 28, 1911—Final proof of electrical specifications sent to printer.
 June 29, 1911—Assistant Engineer of the Department of Finance received electrical plans and specifications.
 July 5, 1911—Specifications for electrical work printed.
 July 7, 1911—Department of Finance approved electrical plans and specifications.
 July 11, 1911—Department of Water Supply, Gas and Electricity approved electrical plans for the Department of Finance.

- July 13, 1911—Board of Estimate and Apportionment approved electrical plans and specifications.
- July 31, 1911—Board of Education acknowledged receipt of plans and specifications for electrical work from the Department of Finance.
- July 31, 1911 }
 Aug. 21, 1911 }—Bids for electrical work opened.
- Sept. 13, 1911—Contract approved by the Board of Education.
- Sept. 20, 1911—Contract filed in the Department of Finance.
- Sept. 27, 1911—Actual date of contract.
- Oct. 9, 1911**—Contract approved by the Department of Finance according to the Board of Education.

FURNITURE

- Oct. 23, 1911—Manuscript of furniture specifications sent to printer.
- Nov. 3, 1911—Final proof of furniture specifications sent to printer.
- Nov. 22, 1911—Furniture plans transmitted to the Department of Finance.
- Nov. 23, 1911—Assistant Engineer of the Department of Finance received furniture plans.
- Dec. 7, 1911—Department of Finance approved furniture plans.
- Dec. 14, 1911—Board of Estimate and Apportionment approved furniture plans.
- Dec. 29, 1911—Board of Education acknowledged receipt of approval of furniture plans from the Department of Finance.
- Jan. 8, 1912*—Furniture bids opened.
- Jan. 10, 1912*—Board of Education approved furniture contract.
- Jan. 30, 1912*—Department of Finance approved furniture contract.

SCHOOL NO. 168—BROOKLYN

DATA PRELIMINARY TO BUILDING DESIGN

- June 30, 1906—Local School Board of district 32 recommended that a site be acquired for a school to relieve Public Schools 25 and 79.
- Sept. 26, 1906—Board of Superintendents recommended to Committee on Sites two alternative sites for a school to relieve Public Schools 122 and 141, where part time existed.
- Nov. 1, 1906—Committee on Sites recommended acquisition of site on Throop Avenue, Whipple, and Bartlett Streets.

- June 12, 1907—Board of Education approved selection of above site and requested Board of Estimate to authorize acquisition, assessed value \$63,700.
- June 21, 1907—Board of Estimate and Apportionment authorized purchase at private sale for not more than \$167,400.
- Jan. 8, 1908—Board of Education rescinded resolution of June 12, 1907, and adopted a new resolution, eliminating one lot from the original site, thus reducing assessed value to \$60,300.
- Jan. 17, 1908—Board of Estimate and Apportionment rescinded resolution of June 21, 1907, and authorized acquisition at private sale of part of smaller site for \$149,400 and condemnation proceedings for remainder, title to vest on filing of oaths.
- Apr. 29, 1908—Commissioners of Estimate and Appraisal in condemnation proceedings were appointed.
- Sept. 17, 1908—Title to land purchased at private sale vested in city.
- Nov. 23, 1909—Title to land obtained by condemnation vested in city.
- Apr. 28, 1909 } —Board of Education requested of Board of Estimate
Dec. 29, 1909 } and Apportionment \$300,000 for construction of
Jan. 12, 1910 } building to relieve schools then having about 4,100
pupils on part time.
- Nov. 10, 1909—Board of Education requested of Board of Estimate and Apportionment \$68,000 for equipment.
- Mar. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$359,535 for construction and equipment of building. In district 32 there were then 2,540 children on part time.
- Apr. 8, 1910—Board of Estimate and Apportionment authorized \$300,000 for construction of this building included with other items.
- Apr. 26, 1910—Board of Aldermen rejected resolution because of objection to other items.
- Apr. 27, 1910—Board of Education reduced other items of request in which \$300,000 for Public School No. 168 was included.
- May 6, 1910—Board of Estimate and Apportionment re-authorized \$300,000 for construction of Public School No. 168.
- May 10, 1910—Board of Aldermen approved.
- May 28, 1910—Mayor returned without approval or disapproval.
- June 3, 1910—Board of Estimate and Apportionment authorized \$59,535 for equipment of Public School No. 168.
- June 28, 1910—Board of Aldermen approved.
- July 19, 1910—Mayor returned without approval or disapproval.

GENERAL CONSTRUCTION

- Aug. 4, 1910—Preliminary plans filed with the Art Commission.
- Aug. 5, 1910—Art Commission approved preliminary plans.
- Sept. 6, 1910—Final construction plans filed with Art Commission.
- Sept. 13, 1910—Art Commission granted official approval of preliminary construction plans.
- Sept. 13, 1910—Art Commission considered final construction plans.
- Sept. 14, 1910—Art Commission certified preliminary construction plans.
- Sept. 19, 1910—Manuscript of specifications for general construction sent to printer.
- Sept. 26, 1910—Building Committee of the Board of Education approved final construction plans.
- Sept. 28, 1910—Board of Education approved of general construction plans.
- Oct. 3, 1910—Final proof of specifications for general construction sent to printer.
- Oct. 7, 1910—General construction specifications printed.
- Oct. 11, 1910—Art Commission approved final construction plans.
- Oct. 18, 1910—Art Commission certified action on final construction plans.
- Nov. 1, 1910—Board of Education acknowledged transmission of general construction plans to the Bureau of Buildings, Brooklyn.
- Nov. 2, 1910—General construction plans transmitted to the Department of Finance.
- Nov. 14, 1910—Board of Education acknowledged approval of general construction plans from Bureau of Buildings, Brooklyn.
- Nov. 14, 1910—Bids for general construction opened.
- Nov. 15, 1910—Plans were actually filed with the Bureau of Buildings, Brooklyn.
- Nov. 22, 1910—Bureau of Buildings, Brooklyn, examined general construction plans.
- Nov. 23, 1910—Board of Education approved general construction plans.
- Nov. 26, 1910—Bureau of Buildings, Brooklyn, notified Board of Education that plans were ready for correction.
- Nov. 28, 1910—Department of Finance approved general construction plans.
- Dec. 7, 1910—Board of Estimate and Apportionment approved of general construction plans.
- Dec. 9, 1910—Board of Education acknowledged receipt of approval from the Board of Estimate and Apportionment.

- Dec. 10, 1910—Board of Education filed amendment for covering of objections offered by Bureau of Buildings, Brooklyn.
- Dec. 10, 1910—Permit 5282/10 was issued authorizing general construction.
- Jan. 4, 1911***—Department of Finance approved contract for general construction.

HEATING AND VENTILATING

- Mar. 22, 1911—Manuscript of specifications for heating and ventilating sent to printer.
- Mar. 30, 1911—Final proof of heating and ventilating specifications sent to printer.
- Apr. 5, 1911—Specifications for heating and ventilating printed.
- Apr. 8, 1911—Heating and ventilating plans submitted to Department of Finance.
- Apr. 10, 1911—Heating and ventilating plans received by the Assistant Engineer of the Department of Finance.
- Apr. 13, 1911—Department of Finance approved heating and ventilating plans.
- Apr. 20, 1911—Board of Estimate and Apportionment approved heating and ventilating plans.
- Apr. 26, 1911—Board of Education acknowledged receipt of approval from Board of Estimate and Apportionment.
- May 8, 1911—Heating and ventilating bids opened.
- May 10, 1911—Board of Education approved heating and ventilating contract.
- May 18, 1911—Contract filed in Department of Finance.
- May 22, 1911—Date of contract.
- June 5, 1911**—According to Board of Education, Department of Finance approved heating and ventilating contract.

ELECTRIC

- May 18, 1911—Manuscript of electrical specifications sent to printer.
- May 26, 1911*—Board of Education acknowledged transmission of electrical plans to Department of Water Supply, Gas and Electricity.
- June 15, 1911*—Board of Education acknowledged receipt of approval of electrical plans from the Department of Water Supply, Gas and Electricity.
- June 20, 1911—Final proof of electrical specifications sent to printer.
- June 26, 1911—Specifications printed.

- June 30, 1911—Electrical plans transmitted to the Department of Finance.
- July 1, 1911—Assistant Engineer of the Department of Finance received electrical plans.
- July 7, 1911—Department of Finance approved electrical plans.
- July 13, 1911—Board of Estimate and Apportionment approved electrical plans.
- July 26, 1911—A letter from Board of Estimate and Apportionment was transmitted to Board of Education on the subject of electrical plans.
- July 29, 1911—Mr. Snyder was notified of the above letter.
- July 31, 1911—Board of Education acknowledged receipt of approval of electrical equipment plans from the Board of Estimate and Apportionment.
- July 31, 1911*—Electrical bids opened.
- Aug. 9, 1911—Board of Education awarded electrical contract.
- Aug. 17, 1911—Electrical contract was filed in the Department of Finance.
- Sept. 5, 1911*—According to Board of Education contract was approved by Department of Finance.
- Sept. 23, 1911—Actual date of contract.

PLUMBING AND DRAINAGE

- Nov. 15, 1910—Plumbing and drainage plans filed with the Bureau of Buildings, Brooklyn.
- Nov. 26, 1910—Bureau of Buildings, Brooklyn, examined plumbing and drainage plans.
- Nov. 26, 1910—Board of Education was notified plans were ready for correction.
- Nov. 28, 1910—Bureau of Buildings, Brooklyn, approved plumbing and drainage plans.

FURNITURE

- Dec. 22, 1911—Manuscript of furniture specifications sent to printer.
- Jan. 10, 1912—Final proof of furniture specifications sent to printer.
- Jan. 15, 1912—Board of Education acknowledged transmission of furniture plans to Department of Finance.
- Jan. 15, 1912—Specifications printed.
- Jan. 16, 1912—Date of transmission of furniture plans to the Department of Finance.
- Jan. 18, 1912—Assistant Engineer of the Department of Finance received furniture plans.

- Feb. 6, 1912—Board of Aldermen approved appropriation for furniture plans.
- Mar. 1, 1912—Department of Finance approved furniture plans.
- Mar. 14, 1912—Board of Estimate and Apportionment approved furniture plans.
- Mar. 21, 1912—Board of Education acknowledged receipt of approval from Board of Estimate and Apportionment.

SCHOOL NO. 171—BROOKLYN

DATA PRELIMINARY TO BUILDING DESIGN

- Mar. 17, 1902—Brooklyn School Board recommended site at Ridgewood Avenue, Railroad Avenue, and Hemlock Street. Committee on Sites referred above recommendation to Local School Board.
- Feb. 21, 1905—City Superintendent recommended a site at Ridgewood and Railroad Avenues.
- Feb. 1, 1906—Committee on Sites ordered that site on Railroad and Ridgewood Avenues be placed on special list of approved sites.
- June 7, 1906—Committee on Sites recommended selection of site on South side of Ridgewood Avenue, from Railroad Avenue to Hemlock Street.
- Oct. 24, 1906—Board of Education selected site, assessed value \$13,000.
- Oct. 8, 1907—Local School Board of district 40 notified Committee on Sites of erection of brick building on the site heretofore selected. Committee on Sites referred the matter to sub-committee for investigation.
- Nov. 6, 1907—Committee on Sites approved recommendation of sub-committee that Board of Education rescind action of October 24, 1906, and in lieu select site on Lincoln and Nichols Avenues, north of Fulton Street.
- July 1, 1908—Committee on Sites rescinded action of November 6, 1907, and selected a third site on Ridgewood Avenue, running from Lincoln to Nichols Avenues.
- Dec. 14, 1908—City Superintendent recommended a site on Ridgewood Avenue, Railroad Avenue, and Hemlock Street, east of Public School 65 on border line of Queens to relieve Public Schools 65 and 108 having 1,180 pupils on part time.

- Feb. 3, 1909—Real Estate Appraiser in Department of Finance suggested to Committee on Sites increasing the site by adding a plot which could be secured for \$7,600. Local School Board urged immediate acquisition. Committee on Sites decided that site selected July 1 1908 was amply large.
- Feb. 10, 1909—Board of Education rescinded action of October 24, 1906 and selected a site on Ridgewood and Nichols Avenues.
- Mar. 4, 1909—Department of Taxes and Assessments appraised property at \$29,000.
- Mar. 12, 1909—Board of Estimate and Apportionment authorized purchase for not more than \$33,000.
- Mar. 29, 1909—City Superintendent recommended site on Lincoln and Nichols Avenues to relieve 1,050 part time pupils in Public Schools 65 and 108.
- May 11, 1909—Committee on Sites took no action because contract for purchase of this site had been executed.
- June 21, 1909—Title vested.
- Apr. 28, 1909 } —Board of Education requested of Board of Estimate
Dec. 29, 1909 } and Apportionment \$316,000 for construction of
Jan. 12, 1910 } building to relieve a district where over 5,000
children were on part time.
- Nov. 10, 1909—Board of Education requested of Board of Estimate and Apportionment \$68,000 for equipment.
- Mar. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$300,000 for construction and \$59,535 for equipment of a building to relieve Public Schools 65 and 108 with 1,202 pupils on part time in neighboring part of Queens.
- Apr. 8, 1910—Board of Estimate and Apportionment authorized \$316,000 for construction of building.
- Apr. 26, 1910—Board of Aldermen rejected resolution.
- Apr. 27, 1910—Board of Education reduced request of Board of Estimate and Apportionment from \$316,000 to \$300,000 for construction.
- May 6, 1910—Board of Estimate and Apportionment amended resolution of April 8, 1910, authorizing \$300,000 instead of \$316,000 for construction.
- May 10, 1910—Board of Aldermen approved.
- May 28, 1910—Mayor returned without approval or disapproval.
- June 3, 1910—Board of Estimate and Apportionment authorized \$59,535 for equipment.
- June 28, 1910—Board of Aldermen approved.

GENERAL CONSTRUCTION

- Sept. 6, 1910—Preliminary plans submitted to the Art Commission.
- Sept. 13, 1910—Art Commission approved preliminary construction plans.
- Sept. 29, 1910—Art Commission certified action.
- Oct. 10, 1910—Final construction plans filed with the Art Commission.
- Oct. 11, 1910—Art Commission approved final construction plans.
- Oct. 18, 1910—Art Commission certified action on final construction plans.
- Oct. 25, 1910—Manuscript of specifications for general construction sent to printer.
- Oct. 31, 1910—Building Committee of the Board of Education approved general construction plans.
- Nov. 4, 1910—Final proof of general construction specifications sent to printer.
- Nov. 9, 1910—Board of Education approved general construction plans.
- Nov. 11, 1910—Specifications for general construction printed.
- Nov. 15, 1910*—General construction plans filed with Bureau of Buildings, Brooklyn.
- Nov. 16, 1910—Plans and specifications for general construction transmitted to Department of Finance.
- Nov. 23, 1910—Assistant Engineer of the Department of Finance received plans and specifications for general construction.
- Nov. 28, 1910—General construction bids opened.
- Dec. 7, 1910—Department of Finance approved general construction plans.
- Dec. 10, 1910*—Bureau of Buildings, Brooklyn, approved general construction plans.
- Dec. 14, 1910—Board of Education approved general construction contract.
- Dec. 15, 1910—Board of Estimate and Apportionment approved general construction plans.
- Dec. 31, 1910***—Department of Finance approved general construction contract.

HEATING AND VENTILATING

- Apr. 24, 1911—Manuscript of heating and ventilating specifications sent to printer.
- May 8, 1911—Final proof of heating and ventilating specifications sent to printer.

- May 12, 1911—Specifications for heating and ventilating printed.
- May 12, 1911—Heating and ventilating plans transmitted to the Department of Finance.
- May 15, 1911—Assistant Engineer of the Department of Finance received heating and ventilating plans.
- May 22, 1911—Department of Finance approved heating and ventilating plans.
- May 25, 1911—Board of Education approved heating and ventilating plans.
- June 2, 1911—Board of Education acknowledged receipt of approval of heating and ventilating plans from the Board of Estimate and Apportionment.
- June 12, 1911—Heating and ventilating bids opened.
- June 14, 1911—Board of Education approved heating and ventilating contract.
- June 26, 1911—Heating and ventilating contract filed in the Department of Finance.
- July 10, 1911—Actual date of contract.
- July 24, 1911**—Department of Finance approved heating and ventilating contract.

ELECTRIC

- Apr. 27, 1911—Manuscript of electrical specifications sent to printer.
- May 8, 1911—Electrical plans transmitted to Department of Water Supply, Gas and Electricity.
- May 15, 1911—Department of Water Supply, Gas and Electricity approved electrical plans.
- May 16, 1911—Final proof of electrical specifications sent to printer.
- May 22, 1911—Electrical specifications printed.
- May 29, 1911—Electrical plans and specifications transmitted to Department of Finance.
- May 29, 1911—Assistant Engineer of the Department of Finance received electrical plans and specifications.
- June 2, 1911—Department of Finance approved electrical plans and specifications.
- June 8, 1911—Board of Estimate and Apportionment approved electrical plans.
- June 16, 1911—Notice received. See document 1522-1911 Board of Education.
- June 19, 1911—Board of Education acknowledged receipt of approval from the Board of Estimate and Apportionment of electrical plans.
- June 26, 1911—Electrical bids opened.
- June 28, 1911—Board of Education approved electrical contract.

- July 8, 1911—Electrical contract filed in Department of Finance.
 July 19, 1911—Actual date of contract.
 July 29, 1911**—Department of Finance approved electrical contract.

FURNITURE

- Sept. 27, 1911—Manuscript of furniture specifications sent to printer.
 Oct. 11, 1911—Final proof of furniture specifications sent to printer.
 Oct. 16, 1911—Furniture specifications printed.
 Oct. 21, 1911—Furniture plans transmitted to Department of Finance.
 Nov. 23, 1911—Assistant Engineer of the Department of Finance received furniture specifications.
 Dec. 20, 1911*—Assistant Engineer of the Department of Finance received furniture plans.
 Feb. 6, 1912—Board of Aldermen approved appropriation for furniture.
 Mar. 6, 1912—Department of Finance approved furniture plans.
 Mar. 14, 1912—Board of Estimate and Apportionment approved furniture plans and specifications.
 Mar. 21, 1912—Board of Education acknowledged receipt of approval of furniture plans from the Board of Estimate and Apportionment.
 Mar. 25, 1912—Furniture bids opened.
 Mar. 27, 1912—Board of Education approved furniture contract.
 May 3, 1912*—Department of Finance approved furniture contract.

SCHOOL NO. 47—BRONX

DATA PRELIMINARY TO BUILDING DESIGN

- Feb. 21, 1905—City Superintendent recommended acquisition of a site for a building to take the place of Public School 15, Bronx, unfit for use.
 Feb. 1, 1906—Committee on Sites ordered above matter to be placed on special calendar of approved sites.
 Apr. 2, 1906—Board of Superintendents notified Committee on Sites that old building for Public School 15 would have to be abandoned.
 Apr. 5, 1906—Secretary of Committee on Sites notified Chairman of Board of Superintendents that the above matter would be acted upon as soon as possible and suggested that the old building be reoccupied temporarily.
 June 7, 1906—Committee on Sites selected a site on Randolph Avenue, East 172d and 173d Streets.

- June 13, 1906—Board of Education selected above site, assessed value \$5,000.
- Sept. 12, 1909—Board of Education amended the names of streets.
- Sept. 28, 1909—Board of Estimate and Apportionment authorized purchase of site at Hammond, St. Lawrence and Randolph Avenues for not more than \$17,000.
- May 1, 1907—Title vested.
- Sept. 25, 1907—Board of Education requested of Board of Estimate and Apportionment funds for a 48-room building.
- Apr. 28, 1909 } —Board of Education requested of Board of Estimate
Dec. 29, 1909 } and Apportionment \$312,000 for construction of
Jan. 12, 1910 } building.
- Nov. 10, 1909—Board of Education requested of Board of Estimate and Apportionment \$68,000 for equipment.
- Mar. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$300,000 for erection of building of 49 rooms and assembly and \$59,535 for equipment.
- July 29, 1910—Board of Estimate authorized \$300,000 for erection of building.
- Oct. 4, 1910—Board of Aldermen approved.
- Oct. 18, 1910—Mayor returned without approval or disapproval.

GENERAL CONSTRUCTION

- Apr. 28, 1909 } —Board of Education requested funds for new build-
Dec. 29, 1909 } ing.
- Nov. 14, 1910—Preliminary construction plans filed with the Art Commission.
- Nov. 15, 1910—Art Commission approved preliminary construction plans.
- Nov. 23, 1910—Action certified.
- Dec. 31, 1910—Plans and application for general construction filed in the Bureau of Buildings, Bronx.
- Jan. 6, 1911—Final plans for general construction filed in Art Commission.
- Jan. 9, 1911—Bureau of Buildings, Bronx, examined and disapproved plans for general construction.
- Jan. 9, 1911—Building Committee of Board of Education approved general construction plans.
- Jan. 10, 1911—Art Commission approved final construction plans.
- Jan. 11, 1911—Board of Education approved general construction plans.
- Jan. 12, 1911—Date of letter from Bureau of Buildings to Board of Education on objection to general construction plans, filed in Bureau of Buildings, Bronx.

- Jan. 12, 1911—Manuscript of general construction specifications sent to printer.
- Jan. 18, 1911—Art Commission certified action of approval.
- Jan. 20, 1911—Board of Education filed amendment to general construction plans with Bureau of Buildings, Bronx.
- Jan. 24, 1911—Bureau of Buildings approved general construction plans.
- Jan. 25, 1911—Bureau of Buildings, Bronx, notified Board of Education of approval of construction plans.
- Jan. 30, 1911—Final proof of general construction specifications sent to printer.
- Feb. 4, 1911—Specifications for general construction printed.
- Feb. 6 or 7, 1911—Date of transmission of general construction plans to Department of Finance.
- Feb. 8, 1911—Assistant Engineer of Department of Finance received general construction plans.
- Feb. 17, 1911—Department of Finance approved general construction plans; sent to Department of Water Supply, Gas and Electricity and returned to Board of Education.
- Feb. 28, 1911—Board of Education again transmitted general construction plans to the Department of Water Supply, Gas and Electricity.
- Mar. 1, 1911—Department of Water Supply, Gas and Electricity received general construction plans.
- Mar. 21, 1911—Department of Water Supply, Gas and Electricity approved general construction plans.
- Mar. 22, 1911—After approval by Department of Water Supply, Gas and Electricity the general construction plans were again transmitted by the Board of Education to the Department of Finance.
- Mar. 22, 1911—Assistant Engineer of the Department of Finance again received general construction plans.
- Mar. 23, 1911—Board of Education received general construction plans from the Department of Water Supply, Gas and Electricity.
- Mar. 24, 1911—Department of Finance again approved general construction plans.
- Mar. 30, 1911—Board of Estimate and Apportionment approved general construction plans.
- Apr. 6, 1911—Board of Education received letter on construction plans. (See document 782-1911.)
- Apr. 7, 1911*—Board of Education acknowledged receipt of general construction plans from Board of Estimate and Apportionment.
- Apr. 17, 1911—General construction bids opened.

- Apr. 26, 1911—Board of Education approved general construction contract.
- May 22, 1911***—Department of Finance approved general construction contract.
- July 29, 1911—Board of Estimate and Apportionment appropriated \$300,000 for construction of building.
- Oct. 4, 1911—Board of Aldermen approved appropriation of \$300,000.
- Oct. 18, 1911—Appropriation of \$300,000 received from Mayor without approval or disapproval.
- Jan. 11, 1912—Appropriation of \$300,000 amended to \$263,000 by Board of Estimate and Apportionment.
- Feb. 6, 1912—Board of Aldermen approved.
- Feb. 20, 1912—Acted upon by the Mayor.

HEATING AND VENTILATING

- Nov. 6, 1911—Manuscript of heating and ventilating specifications sent to printer.
- Nov. 14, 1911—Final proofs of heating and ventilating specifications sent to printer.
- Nov. 17, 1911—Heating and ventilating specifications printed.
- Nov. 21, 1911—Board of Education transmitted heating and ventilating plans to the Department of Finance.
- Nov. 22, 1911—Assistant Engineer of the Department of Finance received heating and ventilating plans.
- Feb. 6, 1912—Board of Aldermen approved appropriation for heating and ventilating equipment.
- Mar. 1, 1912—Department of Finance approved heating and ventilating plans.
- Mar. 14, 1912—Board of Estimate and Apportionment approved heating and ventilating plans.
- Mar. 21, 1912—Board of Education acknowledged receipt of heating and ventilating plans from the Board of Estimate and Apportionment.
- Mar. 25, 1912*—Board of Education again forwarded heating and ventilating plans to the Department of Finance.
- Mar. 25, 1912—Heating and ventilating bids opened.
- Apr. 21, 1912—Board of Education acknowledged receipt of heating and ventilating plans from the Department of Finance.
- Apr. 24, 1912—Board of Education approved heating and ventilating contract.
- May 2, 1912—Contract filed in the Department of Finance.
- May 8, 1912—Actual date of contract.

PLUMBING AND DRAINAGE

- Jan. 20, 1911—Plumbing and drainage application filed in Bureau of Buildings, Bronx.
- Jan. 31, 1911—Bureau of Sewers approved private sewer.
- Feb. 1, 1911—Bureau of Buildings examined plumbing and drainage plans and application.
- Feb. 2, 1911—Bureau of Buildings, Bronx, approved plumbing and drainage plans and application.

ELECTRIC

- Nov. 25, 1911—Manuscript of electrical specifications sent to printer.
- Dec. 8, 1911—Electrical plans transmitted to Department of Water Supply, Gas and Electricity.
- Dec. 9, 1911—Department of Water Supply, Gas and Electricity received electrical plans.
- Dec. 29, 1911—Department of Water Supply, Gas and Electricity approved electrical plans.
- Jan. 2, 1911—Final proof of electrical specifications sent to printer.
- Jan. 5, 1911—Electrical specifications printed.
- Jan. 22, 1911—Electrical plans transmitted to Department of Finance.
- Jan. 24, 1911—Electrical plans received by Assistant Engineer of the Department of Finance.
- Mar. 1, 1912—Department of Finance approved electrical plans.
- Mar. 14, 1912—Board of Estimate and Apportionment approved electrical plans.
- Mar. 20, 1912—Notice of approval of Board of Estimate and Apportionment received by Board of Education. (See document 729-1912.)
- Mar. 21, 1912—Board of Education acknowledged receipt of plans from Board of Estimate and Apportionment.
- Mar. 25, 1912—Electrical bids opened.
- Mar. 27, 1912—Board of Education approved electrical contract.
- Apr. 23, 1912—Electrical contract filed in Department of Finance.
- Apr. 24, 1912—Actual date of contract.
- May 2, 1912—Board of Aldermen approved electrical appropriation.
- May 3, 1912**—Department of Finance approved electrical contract.

FURNITURE

- Mar. 19, 1912—Manuscript of furniture specifications sent to printer.
- Apr. 19, 1912—Final proof of furniture specifications sent to printer.
- Apr. 25, 1912—Furniture specifications printed.
- May 2, 1912—Furniture plans transmitted to Department of Finance.

- May 6, 1912—Assistant Engineer of the Department of Finance received furniture plans.
- May 17, 1912—Department of Finance approved furniture plans.
- May 31, 1912—Board of Estimate and Apportionment approved furniture plans.
- June 4, 1912—Letter received by Board of Education on the subject of furniture plans. (See document 1382-1912.)
- June 8, 1912—Board of Education acknowledged receipt of furniture plans from Board of Estimate and Apportionment.
- June 17, 1912—Furniture bids opened.
- June 26, 1912—Board of Education approved furniture contract.
- July 23, 1912*—Department of Finance approved furniture contract.

SCHOOL NO. 40—QUEENS

DATA PRELIMINARY TO BUILDING DESIGN

- Feb. 1, 1906—Committee on Sites laid over the recommendation of Local School Board of district 43, re acquisition of site on Pacific and Union Hall Avenues.
- Apr. 1, 1906—Board of Superintendents recommended above site.
- Apr. 5, 1906—Committee on Sites approved acquisition pending financial ability.
- June 22, 1906—Committee on Sites decided to present site at Pacific and Union Hall Avenues to Board of Education after securing from President of Borough of Queens resolutions adopted by Jamaica Board of Local Improvements recommending establishment of public school at Cedar Manor.
- Oct. 10, 1906—Board of Education selected site at Pacific and Union Hall Avenues, assessed value \$1,300.
- Oct. 26, 1906—Board of Estimate and Apportionment authorized condemnation proceedings; title to vest on filing of oaths of Commissioners.
- May 1, 1907—Appraiser of Real Estate, Department of Finance, notified Committee on Sites that owner of part of plot refused to divide but that remainder of plot could be bought at a reasonable price. Committee on Sites decided to select the remainder.
- May 8, 1907—Board of Education resolved to select additional plot.
- May 17, 1907—Board of Estimate and Apportionment approved purchase of additional plot.
- July 8, 1907—Board of Estimate and Apportionment amended resolution of May 17th and authorized purchase of original and additional plot for not more than \$7,000.

- Jan. 28, 1908—Title vested.
 Apr. 28, 1909 } —Board of Education requested of Board of Estimate
 Dec. 29, 1909 } and Apportionment \$200,000 for a 32-room build-
 Jan. 12, 1910 } ing.
 Nov. 10, 1909—Board of Education requested \$45,900 from Board
 of Estimate and Apportionment for equipment.
 Mar. 23, 1910—Board of Education requested of Board of Estimate
 and Apportionment \$226,800 for construction and
 \$47,340 for equipment of new building to provide
 accommodations for growing part of Jamaica.
 June 3, 1910—Board of Estimate and Apportionment authorized
 \$226,800 for erection and \$47,340 for equipment
 of Public School 40, Queens.
 June 28, 1910—Board of Aldermen approved.
 July 19, 1910—Mayor returned without approval or disapproval.

GENERAL CONSTRUCTION

- Nov. 11, 1910—Board of Education submitted preliminary construc-
 tion plans to the Art Commission.
 Nov. 13, 1910—Art Commission sent unofficial approval of preliminary
 construction plans to Board of Education.
 Nov. 15, 1910—Art Commission approved preliminary construction
 plans.
 Nov. 23, 1910—Art Commission certified action on above plans.
 Jan. 6, 1911—Final construction plans submitted to Art Commission.
 Jan. 10, 1911—Art Commission approved final construction plans.
 Jan. 11, 1911—Manuscript of general construction specifications sent
 to printer.
 Jan. 18, 1911—Art Commission certified action of January 10th.
 Jan. 28, 1911—Final proof of general construction specifications
 sent to printer.
 Jan. 30, 1911—Building Committee of Board of Education approved
 final construction plans.
 Feb. 2, 1911—General construction specifications printed.
 Feb. 6, 1911—Board of Education approved final construction plans.
 Feb. 7, 1911—Construction plans transmitted to Department of Fi-
 nance.
 Feb. 9, 1911—Assistant Engineer of the Department of Finance
 received construction plans.
 Feb. 10, 1911—Department of Finance returned construction plans to
 Department of Water Supply, Gas and Electricity.
 Feb. 28, 1911—Construction plans transmitted to Department of
 Water Supply, Gas and Electricity.

- Mar. 1, 1911—Department of Water Supply, Gas and Electricity received construction plans.
- Mar. 2, 1911—Construction plans filed with Bureau of Buildings, Queens.
- Mar. 13, 1911—Bureau of Buildings, Queens, approved construction plans.
- Mar. 23, 1911—Department of Water Supply, Gas and Electricity approved construction plans.
- Mar. 31, 1911—Construction plans having been approved by the Department of Water Supply, Gas and Electricity were again transmitted to Department of Finance.
- Apr. 3, 1911—Assistant Engineer of the Department of Finance received construction plans.
- Apr. 7, 1911—Construction plans approved by Department of Finance.
- Apr. 13, 1911—Board of Estimate and Apportionment approved plans.
- Apr. 21, 1911—Board of Education acknowledged receipt of construction plans from Board of Estimate and Apportionment.
- May 1, 1911—Construction bids opened.
- May 10, 1911—Board of Education approved construction contract.
- May 18, 1911—Construction contract filed in Department of Finance.
- June 7, 1911—Actual date of contract.
- June 19, 1911**—Department of Finance approved construction contract.

ELECTRIC

- Oct. 2, 1911—Manuscript of electrical specifications sent to printer.
- Oct. 9, 1911—Board of Education transmitted electrical plans to Department of Water Supply, Gas and Electricity.
- Oct. 10, 1911—Department of Water Supply, Gas and Electricity received electrical plans.
- Nov. 1, 1911—Final proof of electrical specifications sent to printer.
- Nov. 1, 1911—Department of Water Supply, Gas and Electricity approved electrical plans.
- Nov. 9, 1911—Electrical specifications printed.
- Nov. 27, 1911—Board of Education transmitted electrical plans to Department of Finance.
- Dec. 2, 1911—Assistant Engineer of the Department of Finance received electrical plans.
- Dec. 29, 1911—Department of Finance approved electrical plans.
- Jan. 2, 1912*—Electrical bids returned to Department of Finance.
- Jan. 4, 1912—Board of Estimate and Apportionment approved electrical plans.

- Jan. 18, 1912—Board of Education acknowledged receipt of electrical plans from Board of Estimate and Apportionment.
- Jan. 22, 1912—Electrical bids reopened.
- Jan. 24, 1912—Board of Education approved electrical contract.
- Feb. 21, 1912*—Department of Finance approved electrical contract.
- Mar. 21, 1912*—Board of Estimate and Apportionment again approved electrical plans.
- Mar. 27, 1912—Board of Education awarded contract for electrical work.
- Apr. 5, 1912—Contract filed in Department of Finance.
- Apr. 26, 1912—Actual date of contract.
- May 13, 1912**—Department of Finance finally approved electrical contract.

HEATING AND VENTILATING

- Sept. 29, 1911—Manuscript of heating and ventilating specifications sent to printer.
- Oct. 3, 1911—Final proof of heating and ventilating specifications sent to printer.
- Oct. 5, 1911—Heating and ventilating specifications printed.
- Oct. 10, 1911—Board of Education transmitted heating and ventilating plans to Department of Finance.
- Oct. 16, 1911—Assistant Engineer of the Department of Finance received heating and ventilating plans.
- Nov. 6, 1911—Department of Finance approved heating and ventilating plans.
- Nov. 16, 1911—Board of Estimate and Apportionment approved heating and ventilating plans.
- Nov. 25, 1911—Board of Education acknowledged receipt of heating and ventilating plans from Board of Estimate and Apportionment.
- Dec. 18, 1911*—Heating and ventilating bids sent to Department of Finance.
- Dec. 18, 1911—Heating and ventilating bids opened.
- Jan. 11, 1912—Board of Estimate and Apportionment amended the appropriation of June 3, 1910, amounting to \$226,800, to \$213,525.
- Jan. 18, 1912*—Heating and ventilating bids received back from the Department of Finance.
- Jan. 22, 1912—Heating and ventilating bids reopened.
- Jan. 24, 1912—Board of Education approved heating and ventilating contract.
- Jan. 29, 1912—Heating and ventilating contract filed in the Department of Finance.

- Feb. 1, 1912—Actual date of contract.
 Feb. 6, 1912—Board of Aldermen approved amendment of January 11, 1912.
 Feb. 13, 1912^s—Department of Finance approved heating and ventilating contract.
 Feb. 20, 1912—Acted upon by the Mayor.
 July 11, 1912—Board of Estimate and Apportionment again amended appropriation to \$211,549.50.

FURNITURE

- Feb. 13, 1912—Manuscript of furniture specifications sent to printer.
 Feb. 21, 1912—Final proof of furniture specifications sent to printer.
 Feb. 27, 1912—Furniture specifications printed.
 Feb. 27, 1912—Board of Education acknowledged transmission of furniture plans to Department of Finance.
 Feb. 29, 1912—Department of Finance acknowledged date of transmission of furniture plans from Board of Education.
 Mar. 7, 1912—Department of Finance acknowledged receipt of furniture plans.
 Mar. 18, 1912—Department of Finance approved furniture plans.
 Mar. 21, 1912—Board of Estimate and Apportionment approved furniture plans.
 Mar. 29, 1912—Board of Education acknowledged receipt of furniture plans from Board of Estimate and Apportionment.
 Apr. 1, 1912^{*}—Furniture bids opened.
 Apr. 1, 1912^{*}—Board of Education acknowledged transmission of furniture plans or contract to Department of Finance.
 Apr. 10, 1912—Furniture contract approved by Board of Education.
 May 13, 1912^{*}—Department of Finance approved furniture contract.
 June 8, 1912^{*}—Board of Education acknowledged approval of furniture plans or contract by Department of Finance.
 Aug. 8, 1912^{*}—Board of Education again acknowledged transmission of furniture plans to Department of Finance.
 Sept. 18, 1912^{*}—Board of Education again acknowledged approval of Department of Finance of furniture plans.

SCHOOL NO. 61—MANHATTAN

DATA PRELIMINARY TO BUILDING DESIGN

- Mar. 3, 1904—City Superintendent reported the need of a site for a 48-room building to relieve district 8 and Public School 126, which had 20 part time classes.

- Nov. 24, 1905—Chairman of Local School Board recommended an addition to site of Public School 126.
- Jan. 18, 1906—Committee on Sites referred to City Superintendent for report, the recommendation of a committee from Local School Board; re acquisition of property on west side of Public School 126.
- Feb. 2, 1906—Committee on Sites referred City Superintendent's report of approval of addition to site of Public School 126 to a sub-committee.
- Feb. 27, 1906—Committee on Sites ordered this matter stricken from the calendar after a report from its sub-committee that there were ample accommodations for Public School 126.
- Apr. 9, 1906—City Superintendent recommended a site for a new building northeast of Public School 15.
- June 22, 1906—Committee on Sites referred above recommendation of City Superintendent to a sub-committee.
- Sept. 6, 1906—Committee on Sites recommended that alternative sites be referred to the Comptroller and the one favored be presented to the Board of Education. The sites were on East 11th and 12th Streets, adjoining Public School 126, and on East 12th Street, between Avenues B and C.
- Oct. 24, 1906—Board of Education selected site on East 12th Street between Avenues B and C, assessed value \$93,000.
- Apr. 26, 1907—Board of Estimate and Apportionment authorized acquisition by condemnation proceedings and purchase.
- June 28, 1907—Motion for appointment of Commissioners of Estimate and Appraisal.
- July 17, 1907—Commissioners of Estimate and Appraisal appointed.
- Sept. 10, 1907—Oaths of Commissioners filed.
- Dec. 2, 1908—Title vested.
- Apr. 28, 1909 }—Board of Education requested of Board of Estimate
Dec. 29, 1909 } and Apportionment \$316,000 for erection of build-
Jan. 12, 1910 } ing.
- Nov. 10, 1909—Board of Education requested of Board of Estimate and Apportionment \$68,000 for equipment of building.
- Mar. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$335,000 for new building and \$60,750 for equipment to relieve Public School 126, an old and very poor building, with 1,067 pupils on part time.

- Apr. 8, 1910—Board of Estimate and Apportionment authorized \$316,000 corporate stock for this building included with other items.
- Apr. 26, 1910—Board of Aldermen rejected.
- Apr. 27, 1910—Board of Education reduced other items of request in which \$316,000 for Public School 61 was included.
- May 6, 1910—Board of Estimate and Apportionment reauthorized \$316,000 for Public School 61.
- May 10, 1910—Board of Aldermen approved.
- May 28, 1910—Mayor returned resolution without approval or disapproval.
- June 3, 1910—Board of Estimate and Apportionment authorized \$60,750 for equipment.
- June 28, 1910—Board of Aldermen approved.
- July 19, 1910—Mayor returned without approval or disapproval.

GENERAL CONSTRUCTION

- Nov. 12, 1910—Preliminary construction plans submitted to Art Commission.
- Nov. 15, 1910—Art Commission approved preliminary construction plans.
- Nov. 23, 1910—Art Commission certified action on preliminary construction plans.
- Jan. 6, 1911—Final construction plans submitted to Art Commission.
- Jan. 10, 1911—Art Commission approved final construction plans.
- Jan. 18, 1911—Art Commission certified action on final plans.
- Mar. 13, 1911—Manuscript of general construction specifications sent to printer.
- Mar. 27, 1911—Building Committee of Board of Education approved general construction plans.
- Mar. 28, 1911—Plans and application for construction filed with Bureau of Buildings, Manhattan.
- Mar. 29, 1911—Board of Education approved construction plans.
- Mar. 31, 1911—Final proof of general construction specifications sent to printer.
- Apr. 3, 1911—Superintendent of School Buildings transmitted plans of vaults and areas to Chief Engineer of Highways Department, inquiring if vault privileges would be allowed.
- Apr. 4, 1911—Bureau of Buildings, Manhattan, disapproved general construction application.
- Apr. 5, 1911—Chief Engineer of Highways Department reported to Commissioner of Public Works and recommended that permit be granted for vaults and areas without charge.

- Apr. 5, 1911—Commissioner of Public Works granted approval for this recommendation.
- Apr. 6, 1911—Specifications for construction printed.
- Apr. 6, 1911—Department of Education was notified of granting of permit for vaults and areas without charge.
- Apr. 7, 1911—General construction plans transmitted to Department of Water Supply, Gas and Electricity.
- Apr. 12, 1911—Communication from Superintendent of School Buildings arranging for an interview to explain application to Engineer of Bureau of Buildings.
- Apr. 20, 1911—General construction plans approved by Department of Water Supply, Gas and Electricity.
- Apr. 22, 1911—Building Bureau of Manhattan withdraws objections.
- Apr. 22, 1911—Board of Education acknowledged transmission of general construction plans to Department of Finance.
- Apr. 24, 1911—Department of Finance acknowledged transmission of above plans.
- Apr. 25, 1911—Assistant Engineer of the Department of Finance received general construction plans.
- Apr. 26, 1911—Amendment to application filed with Bureau of Buildings, Manhattan.
- Apr. 29, 1911—Bureau of Buildings, Manhattan, approved application for general construction.
- May 1, 1911—Board of Education acknowledged receipt of approval of Bureau of Buildings.
- May 3, 1911—Chief Engineer of Highways Department resigned.
- May 6, 1911—Acting Chief Engineer of Highways Department communicated by letter to Superintendent of Schools that desired permit would be issued free of charge.
- May 9, 1911—Permit for vaults under sidewalk was applied for by Superintendent of Buildings.
- May 19, 1911—Department of Finance disapproved general construction plans after which Board of Education made amendments.
- May 25, 1911—Board of Estimate and Apportionment and Department of Finance approved general construction plans.
- May 31, 1911—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
- June 19, 1911—General construction bids opened.
- June 28, 1911—Board of Education approved general construction contract.
- Aug. 4, 1911***—Department of Finance approved general construction contract.

HEATING AND VENTILATING

- Dec. 19, 1911—Manuscript of heating and ventilating specifications sent to printer.
- Jan. 3, 1912—Final proof of heating and ventilating specifications sent to printer.
- Jan. 8, 1912—Heating and ventilating specifications printed.
- Jan. 10, 1912—Heating and ventilating plans transmitted to Department of Finance.
- Jan. 13, 1912—Assistant Engineer of the Department of Finance received heating and ventilating plans.
- Jan. 20, 1912—Department of Finance approved heating and ventilating plans.
- Jan. 25, 1912—Board of Estimate and Apportionment approved heating and ventilating plans.
- Feb. 5, 1912—Board of Education acknowledge receipt of approval of heating and ventilating plans from Board of Estimate and Apportionment.
- Feb. 13, 1912—Heating and ventilating bids opened.
- Feb. 14, 1912—Board of Education approved heating and ventilating contract.
- Feb. 21, 1912—Heating and ventilating contract filed in Department of Finance.
- Feb. 28, 1912—Actual date of contract.
- Mar. 12, 1912**—Department of Finance approved heating and ventilating contract.

ELECTRIC

- Apr. 10, 1912—Manuscript of electrical specifications sent to printer.
- Apr. 19, 1912—Electrical plans transmitted to Department of Water Supply, Gas and Electricity.
- Apr. 20, 1912—Department of Water Supply, Gas and Electricity received electrical plans.
- June 5, 1912—Department of Water Supply, Gas and Electricity approved electrical plans.
- June 14 to 17—Board of Education transmitted electrical plans to Department of Finance.
- June 14, 1912—Final proof electrical specifications sent to printer.
- June 19, 1912—Electrical specifications printed.
- June 19, 1912—Assistant Engineer of the Department of Finance received electrical plans.
- July 1, 1912—Department of Finance approved electrical plans.
- July 11, 1912—Board of Estimate and Apportionment approved electrical plans.

- July 15, 1912—Electrical bids opened.
 July 15, 1912*—Electrical bids returned to Department of Finance.
 July 26, 1912—Board of Education acknowledged receipt of approval of electrical plans by Department of Finance.
 July 31, 1912—Letter received by Board of Education from the Comptroller relative to electrical plans. (See page 1425, 1912 Journal of Board of Education.)
 Aug. 1, 1912*—Department of Finance approved electrical contract.

FURNITURE

- July 24, 1912—Manuscript of furniture specifications sent to printer.
 Aug. 1, 1912—Final proof of furniture specifications sent to printer.
 Aug. 7, 1912—Furniture specifications printed.
 Sept. 4, 1912—Furniture bids opened.
 Sept. 11, 1912—Board of Education approved furniture contract.

BUSHWICK HIGH SCHOOL—BROOKLYN

DATA PRELIMINARY TO BUILDING DESIGN

- July 8, 1907—Board of Education resolved that Committee on High Schools and Training Schools recommend site for new high school in Ridgewood section of Brooklyn, accessible to East New York.
 Oct. 9, 1907—Board of Education referred a communication from Local School Boards 32 and 36, urging necessity for Manual Training High School for Bushwick, Ridgewood, and East New York sections, to Committee on High Schools and Training Schools.
 Oct. 17, 1907—Committee on High Schools and Training Schools gave a public hearing to organization interested.
 Dec. 23, 1907—Committee on High Schools and Training Schools resolved that high school be established in Ridgewood and that Committee on Sites take necessary steps to secure as site property within old Union Cemetery owned by the City.
 Dec. 26, 1907—Board of Education adopted above.
 Jan. 2, 1908—At meeting of Committee on Sites a communication from the Secretary of the Board of Education transmitting resolution adopted December 26, 1907, was referred to sub-committee.

- Mar. 4, 1908—The Secretary of the Committee of two hundred appeared before the Committee on Sites showing need. Committee on Sites adopted resolution that Board of Education request Commissioners of Sinking Fund to turn over property acquired for playground purposes to Board of Education.
- Mar. 11, 1908—Board of Education adopted resolution of Committee on Sites of March 4, 1908.
- Mar. 25, 1908—Committee on Sites reported that Commissioner of Parks for Brooklyn and Queens is willing to surrender plots. Resolution that Commissioner of Parks take necessary action to surrender to the Commissioner of Sinking Fund the land wanted and that Commissioners of Sinking Fund turn such lands over to the Department of Education.
- Apr. 22, 1908—At meeting of Board of Education a letter dated April 14, 1908, from Commissioner of Parks for Brooklyn and Queens enclosed a copy of a communication addressed to the Sinking Fund Commissioners turning over the above property.
- June 30, 1908—Resolution of Commissioners of Sinking Fund assigning to the Board of Education the property wanted.
- Dec. 7, 1910—On request of Mr. Snyder, Park Commissioner turned over to Sinking Fund Commission additional strip of land.
- Feb. 26, 1908—Board of Education urged Board of Estimate and Apportionment to make provision for erection of high school building within area of land bounded by Palmetto Street, Irving, Knickerbocker, and Putnam Avenues, as soon as possible.
- Mar. 11, 1908—Board of Education requested Board of Estimate and Apportionment to authorize \$600,000 for erection of new high school building and requested Committee on Buildings to arrange for erection as soon as possible.
- Feb. 18, 1910—Board of Estimate and Apportionment authorized \$450,000 for erection of building, smaller amount than that requested because Board of Superintendents feels that smaller high schools were more effective.
- June 3, 1910—Board of Estimate and Apportionment authorized \$93,960 for equipment.
- June 28, 1910—Board of Aldermen approved.
- July 19, 1910—Mayor returned without approval or disapproval.

- July 17, 1911—Board of Estimate and Apportionment authorized \$189,000 for interior construction and equipment.
- July 25, 1911—Board of Aldermen approved.
- July 31, 1911—Mayor returned without approval or disapproval.

GENERAL CONSTRUCTION

- Sept. 8, 1910—Preliminary construction plans submitted to Art Commission.
- Sept. 13, 1910—Preliminary construction plans approved by Art Commission.
- Sept. 29, 1910—Art Commission certified action on plans.
- Nov. 9, 1910—Board of Education requested additional funds for general construction.
- Feb. 11, 1911—Final construction plans submitted to Art Commission.
- Feb. 14, 1911—Art Commission approved final construction plans.
- Feb. 25, 1911—Art Commission certified action on above plans.
- Mar. 22, 1911—Manuscript of general construction specifications sent to printer.
- Apr. 10, 1911—Building Committee of Board of Education approved final plans for construction.
- Apr. 12, 1911—Board of Education approved final construction plans.
- Apr. 12, 1911—Final proof of general construction specifications sent to printer.
- Apr. 20, 1911—General construction specifications printed.
- Apr. 21, 1911—General construction plans filed in Department of Water Supply, Gas and Electricity.
- May 2, 1911—Department of Water Supply, Gas and Electricity approved general construction plans.
- May 6, 1911—General construction plans transmitted to Department of Finance.
- May 8, 1911—Assistant Engineer of the Department of Finance received general construction plans.
- May 23, 1911—Final construction plans filed with Bureau of Buildings, Brooklyn.
- May 29, 1911—Department of Finance approved construction plans.
- May 31, 1911—Bureau of Buildings, Brooklyn, examined final plans.
- June 1, 1911—Bureau of Buildings, Brooklyn, disapproved plans.
- June 1, 1911—Board of Estimate and Apportionment approved plans.
- June 9, 1911—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
- June 26, 1911—General construction bids opened.
- June 27, 1911—Board of Education corrected final construction plans.
- June 27, 1911—Bureau of Buildings, Brooklyn, approved final plans.

- June 25, 1911—Bureau of Buildings, Brooklyn, issued permit No. 4084/11.
 June 28, 1911—Board of Education approved construction contract.
 July 8, 1911—General construction contract filed in Department of Finance.
 July 19, 1911—Actual date of contract.
 Aug. 2, 1911**—Department of Finance approved construction contract.

HEATING AND VENTILATING

- May 4, 1912—Manuscript of heating and ventilating specifications sent to printer.
 May 15, 1912†—Heating and ventilating plans received by Department of Water Supply, Gas and Electricity.
 June 27, 1912†—Heating and ventilating plans returned to Board of Education.
 July 22, 1912†—Department of Water Supply, Gas and Electricity again received heating and ventilating plans.
 Aug. 3, 1912†—Heating and ventilating plans returned to Board of Education.
 Aug. 10, 1912†—Department of Water Supply, Gas and Electricity received heating and ventilating plans.
 Aug. 15, 1912†—Heating and ventilating plans returned to Board of Education.
 Aug. 24, 1912—Final proof of heating and ventilating specifications sent to printer.
 Aug. 29, 1912—Heating and ventilating specifications printed.
 Sept. 5, 1912*—Board of Education acknowledged transmission of heating and ventilating plans to Department of Finance.
 Sept. 20, 1912*—Board of Education acknowledged receipt of heating and ventilating plans from the Department of Finance.
 Sept. 23, 1912—Heating and ventilating bids opened.
 Oct. 14, 1912*—Heating and ventilating bids reopened.

*Caused by refusal of Department of Water Supply, Gas and Electricity to allow isolated plant to be installed.

ELECTRIC

- June 18, 1912—Manuscript of electrical specifications sent to printer.
 July 24, 1912—Department of Water Supply, Gas and Electricity received electrical plans.

- Aug. 16, 1912—Department of Water Supply, Gas and Electricity approved electrical plans.
 Aug. 19, 1912—Final proof of electrical specifications sent to printer.
 Aug. 24, 1912—Electrical specifications printed.
 Sept. 16, 1912—Electrical bids opened.

PLUMBING AND DRAINAGE

- May 23, 1911—Plumbing and drainage plans filed in Bureau of Buildings, Brooklyn.
 June 5, 1911—Bureau of Buildings, Brooklyn, examined plumbing and drainage plans.
 June 6, 1911—Board of Education notified by Bureau of Buildings to correct plans and application.
 June 16, 1911—Board of Education corrected plumbing and drainage plans.
 June 27, 1911—Bureau of Buildings approved plumbing and drainage plans.

ADDITION TO SCHOOL NO. 132—MANHATTAN

DATA PRELIMINARY TO BUILDING DESIGN

Addition built on original site

- Feb. 6, 1911 } —Board of Education requested of Board of Estimate
 Apr. 12, 1911 } and Apportionment \$230,140 for erection, equip-
 } ment and furnishing of addition.
 Mar. 27, 1911—Parents' Association of Public School 132 requested
 hearing of Board of Estimate and Apportionment.
 Apr. 13, 1911—Board of Estimate and Apportionment authorized
 \$230,140 for erection, equipment, and furniture of
 the other addition requested February 6 and April
 12, 1911.

GENERAL CONSTRUCTION

- May 2, 1908—Final construction plans submitted to Art Commission.
 May 12, 1908—Final construction plans approved by the Art Commission.
 May 20, 1908—Final construction plans certified by the Art Commission.
 Nov. 19, 1909—New set of final construction plans submitted to the Art Commission.

- Dec. 13, 1909—Building Committee of the Board of Education approved general construction plans.
- Dec. 14, 1909—New set of final construction plans approved by the Art Commission.
- Dec. 22, 1909—Board of Education approved general construction plans.
- Dec. 27, 1909—New set of final construction plans certified by Art Commission.
- Mar. 27, 1911—Parents' Association of Public School 132, Manhattan, presented letter to Board of Estimate and Apportionment requesting hearing.
- Apr. 4, 1911—Corporate Stock Budget Committee recommended appropriation of \$320,140.
- Apr. 13, 1911—Appropriation was made.
- May 5, 1911—General construction permit reissued by Bureau of Buildings.
- May 15, 1911—General construction plans received by Department of Water Supply, Gas and Electricity.
- May 16, 1911—Manuscript of general construction specifications sent to printer.
- May 17, 1911—General construction plans approved by Department of Water Supply, Gas and Electricity.
- May 20, 1911—Permits for vaults and areas applied for at Highways Department.
- May 23, 1911—Application disapproved by Department of Highways.
- May 29, 1911—Superintendent of School Buildings replied to Department of Highways.
- June 2, 1911—Chief Engineer of Department of Highways reported against granting permit except in accordance with regulations of that Department. The matter was taken up personally with the Board of Education.
- June 5, 1911—Final proof of general construction specifications sent to printer.
- June 9, 1911—General construction specifications printed.
- June 12, 1911—General construction plans again received by Department of Water Supply, Gas and Electricity.
- June 15, 1911—Permit for vaults and areas issued by Department of Highways.
- June 21, 1911—General construction plans approved by Department of Water Supply, Gas and Electricity.
- June 23, 1911—General construction plans transmitted to Department of Finance.
- June 24, 1911—General construction plans received by Assistant Engineer, Department of Finance.

- June 30, 1911—General construction plans approved by the Department of Finance.
- July 6, 1911—General construction plans approved by Board of Estimate and Apportionment.
- July 21, 1911—Board of Education acknowledge receipt of approval from Board of Estimate and Apportionment.
- July 24, 1911—General construction bids opened.
- July 26, 1911—General construction contract approved by Board of Education.
- Aug. 3, 1911—General construction contract filed in Department of Finance.
- Aug. 16, 1911—Actual date of contract.
- Sept. 5, 1911**—General construction contract approved by Department of Finance.

HEATING AND VENTILATING

- Mar. 11, 1912—Manuscript of heating and ventilating specifications sent to printer.
- Mar. 16, 1912—Final proof of heating and ventilating specifications sent to printer.
- Mar. 21, 1912—Heating and ventilating specifications printed.
- Mar. 26, 1912—Heating and ventilating plans transmitted to Department of Water Supply, Gas and Electricity.
- Mar. 27, 1912—Heating and ventilating plans received by Department of Water Supply, Gas and Electricity.
- Mar. 27-28, 1912—Heating and ventilating plans transmitted to Department of Finance.
- Mar. 29, 1912—Heating and ventilating plans received by the Assistant Engineer of the Department of Finance.
- Apr. 8, 1912—Heating and ventilating plans approved by Department of Water Supply, Gas and Electricity.
- Apr. 11, 1912—Heating and ventilating plans approved by Department of Finance.
- Apr. 25, 1912—Heating and ventilating plans approved by Board of Estimate and Apportionment.
- May 1, 1912—Board of Education acknowledge receipt of heating and ventilating plans from Board of Estimate and Apportionment.
- May 13, 1912—Heating and ventilating bids opened.
- May 22, 1912—Heating and ventilating contract approved by Board of Education.
- June 6, 1912—Heating and ventilating contract filed in Department of Finance.

- June 12, 1912—Actual date of contract.
 July 2, 1912**—Heating and ventilating contract approved by Department of Finance.

ELECTRICAL WORK

- Jan. 22, 1912—Manuscript of electrical specifications sent to printer.
 Feb. 14, 1912—Electrical plans received by Department of Water Supply, Gas and Electricity.
 Mar. 6, 1912—Final proof of electrical specifications sent to printer.
 Mar. 11, 1912—Electrical specifications printed.
 Mar. 7, 1912—Electrical plans approved by Department of Water Supply, Gas and Electricity.
 Apr. 2-3, 1912—Electrical plans transmitted to Department of Finance.
 Apr. 3, 1912—Electrical plans received by Assistant Engineer of Department of Finance.
 Apr. 10, 1912—Electrical plans approved by Department of Finance.
 Apr. 18, 1912—Electrical plans approved by Board of Estimate and Apportionment.
 May 6, 1912—Electrical bids opened.
 May 8, 1912—Electrical contract approved by Board of Education.
 July 22, 1912***—Electrical contract approved by Department of Finance.

FURNITURE

- May 21, 1912—Manuscript of furniture specifications sent to printer.
 June 5, 1912—Final proof of furniture specifications sent to printer.
 June 10, 1912—Specifications for furniture printed.
 June 13, 1912—Furniture plans sent to Department of Finance.
 June 17, 1912—Furniture plans received by Assistant Engineer, Department of Finance.
 July 1, 1912—Furniture plans approved by Department of Finance.
 July 8, 1912—Furniture bids opened.
 July 11, 1912—Furniture plans approved by Board of Estimate and Apportionment.
 July 24, 1912—Board of Education received notice of approval by Board of Estimate and Apportionment.
 July 26, 1912—Board of Education acknowledge receipt of approval by Board of Estimate and Apportionment.

ADDITION TO SCHOOL NO. 20—BRONX

DATA PRELIMINARY TO BUILDING DESIGN

Addition built on original site

- Nov. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$101,640 for construction and equipment of addition.
- Feb. 6, 1911—Board of Education requested of Board of Estimate and Apportionment \$106,200 for construction and equipment of addition.
- Mar. 9, 1911—Board of Estimate and Apportionment authorized \$106,200 for construction and equipment.

GENERAL CONSTRUCTION

- Apr. 5, 1911—Preliminary construction plans submitted to Art Commission.
- Apr. 11, 1911—Art Commission approved preliminary construction plans.
- Apr. 20, 1911—Art Commission certified action on preliminary construction plans.
- May 3, 1911—Board of Education acknowledged approval of Art Commission.
- May 6, 1911—Final construction plans submitted to Art Commission.
- May 11, 1911—Art Commission approved final construction plans.
- May 22, 1911—Art Commission certified action on final construction plans.
- May 22, 1911—Manuscript of construction specifications sent to printer.
- June 7, 1911—Final proof of construction specifications sent to printer.
- June 12, 1911—Building Committee of the Board of Education approved final construction plans.
- June 14, 1911—Board of Education approved final construction plans.
- June 14, 1911—Specifications for general construction printed.
- June 17, 1911—Department of Water Supply, Gas and Electricity received construction plans.
- June 24, 1911—Department of Water Supply, Gas and Electricity approved general construction plans.
- June 30, 1911—Final construction plans transmitted to Bureau of Buildings, Bronx.
- July 1, 1911—Bureau of Buildings, Bronx, received construction plans.

- July 11, 1911—Board of Education stated as date of approval of Department of Water Supply, Gas and Electricity. This statement is incorrect, June 24th being correct.
- July 11 or 12, 1911—General construction plans transmitted to Department of Finance.
- July 13, 1911—Bureau of Buildings, Bronx, examined final construction plans.
- July 14, 1911—Assistant Engineer of the Department of Finance received construction plans.
- July 14, 1911—Bureau of Buildings, Bronx, disapproved final construction plans.
- July 22, 1911—Department of Finance approved construction plans.
- July 25, 1911—Superintendent of Buildings corrected final construction plans.
- July 27, 1911—Bureau of Buildings, Bronx, approved final construction plans.
- July 27, 1911—Board of Estimate and Apportionment approved construction plans.
- July 28, 1911—Board of Education notified of approval of Bureau of Buildings, Bronx.
- Aug. 14, 1911—Construction bids opened.
- Aug. 18, 1911—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
- Sept. 13, 1911—Board of Education approved construction contract.
- Sept. 20, 1911—Construction contract filed in Department of Finance.
- Sept. 22, 1911—Actual date of contract.
- Sept. 25, 1911**—Department of Finance approved construction contract.

HEATING AND VENTILATING

- May 15, 1912—Manuscript of heating and ventilating specifications sent to printer.
- May 23, 1912—Final proof of heating and ventilating specifications sent to printer.
- May 28, 1912—Heating and ventilating specifications printed.
- May 28 or 29, 1912—Heating and ventilating plans submitted to Department of Finance.
- May 29, 1912—Assistant Engineer of the Department of Finance received heating and ventilating plans.
- June 7, 1912—Department of Finance approved heating and ventilating plans.
- June 13, 1912—Board of Estimate and Apportionment approved heating and ventilating plans.

- June 21, 1912—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
- July 1, 1912—Heating and ventilating bids opened.

PLUMBING AND DRAINAGE

- July 1, 1911—Plumbing and Drainage plans filed with Bureau of Buildings, Bronx.
- July 31, 1911—Bureau of Buildings, Bronx, examined plumbing and drainage plans.
- Aug. 1, 1911—Bureau of Buildings, Bronx, approved plumbing and drainage plans.

ELECTRIC

- Mar. 21, 1912—Manuscript of electrical specifications sent to printer.
- Apr. 4, 1912—Department of Water Supply, Gas and Electricity received electrical specifications.
- May 11, 1912—Department of Water Supply, Gas and Electricity approved electrical specifications.
- May 14, 1912—Final proof of specifications sent to printer.
- May 20, 1912—Electrical specifications printed.
- May 24, 1912—Electrical plans sent to Department of Water Supply, Gas and Electricity.
- June 10-11, 1912—Electrical plans and specifications sent to Department of Finance.
- June 13, 1912—Assistant Engineer of the Department of Finance received electrical plans and specifications.
- June 25, 1912—Department of Finance approved electrical plans and specifications.
- July 1, 1912—Electrical bids opened.
- July 5, 1912—Board of Education acknowledged receipt of approval of Department of Water Supply, Gas and Electricity.
- July 10, 1912—Board of Education approved electrical contract.
- July 11, 1912—Board of Estimate and Apportionment approved electrical plans and specifications.
- July 24, 1912—Electrical contract filed in Department of Finance.
- July 26, 1912—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
- July 29, 1912—Actual date of contract.
- Aug. 14, 1912**—Department of Finance approved electrical contract.

FURNITURE

- July 10, 1912—Manuscript of furniture specifications sent to printer.
 July 17, 1912—Final proof of furniture specifications sent to printer.
 July 22, 1912—Furniture specifications printed.
 July 24, 1912—According to Board of Education furniture plans were sent to Department of Finance.
 Aug. 8, 1912—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
 Aug. 26, 1912—Furniture bids opened.
 Sept. 11, 1912—Board of Education approved furniture contract.

ADDITION TO SCHOOL NO. 78—MANHATTAN

DATA PRELIMINARY TO BUILDING DESIGN

- Sept. 24, 1902—Committee on Sites referred to a sub-committee a communication offering to sell premises adjoining Public School 78, Manhattan.
 Oct. 16, 1902—Committee on Sites ordered above communication on file.
 Mar. 15, 1906—District and division Superintendents recommended that lots adjoining Public School 78 be acquired because of the tenements being erected and the overcrowding which will result in this rapidly growing section.
 Apr. 5, 1906—Committee on Sites approved acquisition pending financial ability.
 June 22, 1906—Committee on Sites resolved to report selection of three lots on north and three on east side of Public School 78 to Board of Education.
 Oct. 24, 1906—Board of Education laid over selection of above sites.
 Nov. 14, 1906—Board of Education approved selection of site at Pleasant Avenue and 119th Street, adjoining Public School 78, assessed value \$36,500.
 Jan. 4, 1907—Board of Estimate and Apportionment authorized condemnation.
 Mar. 26, 1907—Motion for appointment of Commissioners of Estimate and Appraisal.
 Apr. 5, 1907—Commissioners of Estimate and Appraisal appointed.
 May 6, 1908—Secretary of Committee on Sites notified Committee on Buildings relative to the recommendation of the Local School Board that property be utilized at once, that the report of the Commissioners would be presented for confirmation not later than May 28, 1908, and then title would vest.

- June 5, 1908—Title vested.
- Apr. 28, 1909—Board of Education requested of Board of Estimate and Apportionment \$182,000 for construction of addition.
- Oct. 29, 1909—Board of Estimate and Apportionment authorized \$182,000 for construction of addition.
- Dec. 14, 1909—Board of Aldermen approved.
- Dec. 28, 1909—Mayor vetoed.
- Dec. 29, 1909 } —Board of Education requested of Board of Estimate
 Jan. 1, 1910 } and Apportionment \$182,000 for construction of
 addition.
- Mar. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$244,800 for construction and equipment of addition.
- Apr. 27, 1910—Board of Education did not include request for addition to Public School 78 in revised requirements for corporate stock sent to Board of Estimate and Apportionment.
- July 27, 1910—Board of Education made special request of Board of Estimate and Apportionment for \$244,800 for construction and equipment of addition.
- Aug. 26, 1910—Board of Estimate and Apportionment referred above request to Corporate Stock Budget Committee. A protest against this appropriation from the Edward Boylston Association was placed on file.
- Feb. 6, 1911 } —Board of Education requested of Board of Estimate
 Apr. 12, 1911 } and Apportionment \$256,820 for construction and
 equipment of addition and \$13,120 for furniture.
 This request was placed second in urgency on the list.
- Apr. 16, 1911—Board of Estimate and Apportionment authorized \$269,940 for construction, equipment, and furniture for addition.
- June 27, 1911—Board of Aldermen recommended that Board of Education fill in property and let it be used as a playground until additions to Public School 78 are ready to relieve deplorable condition.

GENERAL CONSTRUCTION

- Nov. 5, 1909—Final plans for general construction submitted to Art Commission.
- Nov. 8, 1909—Building Committee of the Board of Education approved final plans.
- Nov. 10, 1909—Board of Education approved final plans for general construction.

- Nov. 22, 1909—Board of Education acknowledged receipt of approval from Art Commission.
- Nov. 19, 1909—Final plans for general construction certified by Art Commission.
- May 5, 1911—Permit reissued by Building Department.
- May 26, 1911—Manuscript of general construction specifications sent to printer.
- June 14, 1911—Superintendent of School Buildings made the application to the Department of Highways for permit for vault and areas outside school building, areas to be covered with gratings flush with sidewalk.
- July 1, 1911—Final proof of general construction specifications sent to printer.
- July 10, 1911—General construction specifications printed.
- July 12, 1911—Letter from Superintendent of School Buildings to Department of Highways asking for reply to letter of June 15.
- July 13, 1911—General construction plans filed with the Department of Water Supply, Gas and Electricity.
- July 19, 1911—General construction plans approved by the Department of Water Supply, Gas and Electricity.
- July 20, 1911—Acting Chief Engineer of the Highways Department recommended permit issued without charge.
- July 24, 1911—Permit issued.
- July 26, 1911—Construction plans transmitted to the Department of Finance.
- July 29, 1911—Construction plans received by the Assistant Engineer of the Department of Finance.
- Aug. 9, 1911—Construction plans approved by the Comptroller and Department of Finance.
- Aug. 14, 1911—Board of Education acknowledged receipt of approval from Department of Finance.
- Sept. 5, 1911—General construction bids opened.
- Sept. 13, 1911—General construction contract approved by Board of Education.
- Sept. 20, 1911—Contract filed in Department of Finance.
- Sept. 22, 1911—Actual date of contract.
- Sept. 25, 1911**—Construction contract approved by Department of Finance.

HEATING AND VENTILATING

- Jan. 15, 1912—Manuscript of heating and ventilating specifications sent to printer.
- Jan. 22, 1912—Final proof of heating and ventilating specifications sent to printer.

- Jan. 25, 1912—Heating and ventilating specifications printed.
 Jan. 26 or 27, 1912—Heating and ventilating plans transmitted to Department of Finance.
 Jan. 29, 1912—Heating and ventilating plans received by the Assistant Engineer of the Department of Finance.
 Feb. 1, 1912—Heating and ventilating plans approved by the Department of Finance.
 Feb. 8, 1912—Heating and ventilating plans approved by the Board of Estimate and Apportionment.
 Feb. 17, 1912—Notice of approval received by the Board of Education from the Board of Estimate and Apportionment.
 Feb. 19, 1912—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
 Mar. 4, 1912—Heating and ventilating bids opened.
 Mar. 13, 1912—Heating and ventilating contract approved by the Board of Education.
 Mar. 18, 1912—Heating and ventilating contract filed in the Department of Finance.
 Mar. 22, 1912—Actual date of contract.
 Apr. 1, 1912**—Heating and ventilating contract approved by the Department of Finance.

ELECTRIC

- Feb. 28, 1912—Manuscript of electrical specifications sent to printer.
 Mar. 6, 1912—Electrical plans transmitted to the Department of Water Supply, Gas and Electricity.
 Mar. 8, 1912—Electrical plans received by the Department of Water Supply, Gas and Electricity.
 Apr. 3, 1912—Electrical plans approved by the Department of Water Supply, Gas and Electricity.
 Apr. 4, 1912—Final proof of electrical specifications sent to printer.
 Apr. 10, 1912—Electrical specifications printed.
 Apr. 25, 1912—Electrical plans transmitted to Department of Finance.
 Apr. 29, 1912—Electrical plans received by the Assistant Engineer of the Department of Finance.
 May 17, 1912—Electrical plans approved by Department of Finance.
 May 31, 1912—Electrical plans approved by Board of Estimate and Apportionment.
 June 4, 1912—Letter on subject of electrical work sent to Board of Estimate and Apportionment. (See document 1380/1912, Board of Education.)
 June 8, 1912—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
 June 10, 1912—Electrical bids opened.

- June 12, 1912—Electrical contract approved by the Board of Education.
 June 24, 1912—Electrical contract filed in the Department of Finance.
 June 28, 1912—Actual date of contract.
 July 17, 1912**—Electrical contract approved by Department of Finance.

FURNITURE

- June 14, 1912—Manuscript of furniture specifications sent to printer.
 June 24, 1912—Final proof of furniture specifications sent to printer.
 July 1, 1912—Furniture specifications sent to Department of Finance.
 July 3, 1912—Furniture specifications printed.
 July 5, 1912—Furniture specifications received by the Assistant Engineer of the Department of Finance.
 July 8, 1912—Furniture specifications approved by Department of Finance.
 July 11, 1912—Furniture specifications approved by the Board of Estimate and Apportionment.
 July 22, 1912—Furniture bids opened.
 July 24, 1912—Furniture contract approved by Board of Education.
 July 30, 1912—Letter signed by Comptroller received August 2 by Board of Education on the subject of furniture specifications.
 Aug. 3, 1912*—Furniture contract approved by the Department of Finance.

SCHOOL NO. 45—BRONX

DATA PRELIMINARY TO BUILDING DESIGN

- Mar. 18, 1904—Local School Board recommended site at 187th, Marion, and Tiebout Streets.
 Apr. 18, 1904—Principal of Public School 32 requested more room, as he had no rooms for additional classes.
 Apr. 20, 1904—Committee on Sites resolved that addition to present site of Public School 32 be approved awaiting financial ability.
 Feb. 21, 1905—City Superintendent recommended that \$50,000 be requested in 1905 for purchase of property adjoining Public School 32.
 Dec. 12, 1905—Local School Board submitted three new propositions.
 Feb. 1, 1906—Committee on Sites moved that acquisition of property on Beaumont and Cambrelung Avenues, adjoining Public School 32 be placed on special list of approved sites.

- June 13, 1906—Local School Board recommended purchase of site adjoining Public School 32.
- June 22, 1906—Committee on Sites rescinded action of February 1, 1906, and in lieu recommended that a site be selected on north side of E. 187th Street, running from Lorillard Place to Hoffman Street.
- Sept. 20, 1906—Committee on Sites rescinded action of June 22, 1906, and selected in lieu a third site on north side of East 189th Street, running from Hoffman Street to Lorillard Place.
- Oct. 10, 1906—Board of Education selected third site above, assessed value \$20,000.
- Oct. 26, 1906—Board of Estimate and Apportionment authorized purchase for not more than \$45,000.
- Dec. 29, 1906—Title vested.
- Mar. 2, 1906—Committee on Sites disapproved of suggestion of acquisition of remainder of block in which Public School 32 was located for erection of addition, because new Public School 45 would do away with need for addition.
- May 22, 1907 }—Board of Education requested of Board of Estimate
 Sept. 25, 1907 } and Apportionment funds for new building of 60
 } class rooms.
- Sept. 30, 1907—Committee on Buildings approved plans.
- Oct. 9, 1907—Board of Education approved plans.
- Feb. 3, 1908—Board of Education requested of Board of Estimate and Apportionment funds for a new building of 60 class rooms.
- Feb. 26, 1908—Board of Education requested of Board of Estimate and Apportionment \$341,000 for construction of building.
- Apr. 28, 1909 }—Board of Education requested of Board of Estimate
 Dec. 29, 1909 } and Apportionment \$312,000 for construction of
 } 48-room building.
- Mar. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$359,535 for construction and equipment of building.
- Feb. 6, 1911 }—Board of Education requested of Board of Estimate
 Apr. 12, 1911 } and Apportionment \$385,630 for construction,
 } equipment and furniture of new building.
- May 4, 1911—Board of Estimate and Apportionment authorized \$385,630.

GENERAL CONSTRUCTION

- June 30, 1910—Final construction plans filed with Art Commission.
- July 5, 1910—Art Commission approved final construction plans.
- May 18, 1911—Bureau of Buildings, Bronx, re-issued permit for general construction.
- May 27, 1911—Manuscript of general construction specifications sent to printer.
- June 5, 1911—Building Committee of Board of Education approved general construction plans.
- June 14, 1911—Board of Education approved construction plans.
- July 13, 1911—Final proof of general construction specifications sent to printer.
- July 19, 1911—Specifications for general construction printed.
- July 21, 1911—Plans filed with Department of Water Supply, Gas and Electricity.
- Aug. 5, 1911—Department of Water Supply, Gas and Electricity approved general construction plans.
- Aug. 8, 1911—Board of Education acknowledged receipt of approval of Department of Water Supply, Gas and Electricity.
- Aug. 9 or 10, 1911—General construction plans sent to the Department of Finance.
- Aug. 11, 1911—Assistant Engineer of the Department of Finance received general construction plans.
- Aug. 24, 1911—Department of Finance approved general construction plans.
- Aug. 24, 1911—The Comptroller approved general construction plans.
- Sept. 1, 1911—Board of Education acknowledge receipt of general construction plans from the Board of Estimate.
- Sept. 11, 1911—General construction bids opened.
- Sept. 13, 1911—General construction bids approved by Board of Education.
- Oct. 5, 1911—General construction contract filed in the Department of Finance.
- Oct. 5, 1911—Actual date of contract.
- Oct. 9, 1911**—General construction contract approved by the Department of Finance.

HEATING AND VENTILATING

- Dec. 1, 1911—Manuscript of heating and ventilating specifications sent to printer.
- Dec. 14, 1911—Final proof of heating and ventilating specifications sent to printer.

- Dec. 21, 1911—Heating and ventilating specifications printed.
- Dec. 22, 1911—Heating and ventilating plans transmitted to the Department of Finance.
- Dec. 27, 1911—Heating and ventilating plans received by the Assistant Engineer of the Department of Finance.
- Jan. 10, 1912—Heating and ventilating plans approved by the Department of Finance.
- Jan. 18, 1912—Heating and ventilating plans approved by the Board of Estimate and Apportionment.
- Jan. 24, 1912—Board of Education received notice of approval of heating and ventilating plans from the Board of Estimate and Apportionment.
- Jan. 26, 1912—Board of Education acknowledge receipt of approval of Board of Estimate and Apportionment.
- Feb. 5, 1912—Heating and ventilating bids opened.
- Feb. 5, 1912—Heating and ventilating contract approved by the Board of Education.
- Feb. 13, 1912—Heating and ventilating contract filed in the Department of Finance.
- Feb. 28, 1912—Actual date of contract.
- Mar. 12, 1912**—Heating and ventilating contract approved by the Department of Finance.
- Mar. 21, 1912—Heating and ventilating plans received by the Department of Water Supply, Gas and Electricity.
- Mar. 26, 1912—Board of Education acknowledge approval of Department of Water Supply, Gas and Electricity.
- Apr. 3, 1912—Heating and ventilating plans approved by the Department of Water Supply, Gas and Electricity.

ELECTRICAL WORK

- May 3, 1912—Manuscript of electrical specifications sent to printer.
- May 14, 1912—Electrical specifications sent to the Department of Water Supply, Gas and Electricity.
- May 16, 1912—Electrical plans received by the Department of Water Supply, Gas and Electricity.
- June 12, 1912—Electrical plans approved by the Department of Water Supply, Gas and Electricity.
- June 13, 1912—Electrical plans received by the Board of Education from the Department of Water Supply, Gas and Electricity.
- June 14, 1912—Final proof of electrical specifications sent to printer.
- June 14 or 17, 1912—Electrical plans sent to the Department of Finance.

- June 19, 1912—Electrical plans received by the Assistant Engineer of the Department of Finance.
- June 19, 1912—Electrical specifications printed.
- July 1, 1912—Electrical plans approved by the Department of Finance.
- July 11, 1912—Electrical plans approved by the Board of Estimate and Apportionment.
- July 22, 1912—Electrical bids opened.
- July 24, 1912—Electrical contract approved by the Board of Education.
- July 26, 1912—Board of Education acknowledge receipt of approval of plans.

FURNITURE

- Sept. 6, 1912—Manuscript of furniture plans sent to printer.
- Sept. 25, 1912—Final proof of furniture plans sent to printer.
- Sept. 28, 1912—Furniture specifications printed.

NORMAL COLLEGE

GENERAL CONSTRUCTION

- Aug. 4, 1910—Preliminary construction plans submitted to Art Commission.
- Aug. 5, 1910—Preliminary construction plans approved by Art Commission.
- Aug. 8, 1910—Board of Education notified of approval of Art Commission.
- Sept. 13, 1910—Art Commission ratified approval.
- Jan. 29, 1911—Letter from Board of Education asking for permit received by Department of Finance.
- Apr. 7, 1911—Final plans submitted to Art Commission.
- Apr. 11, 1911—Personal meeting between officials of Board of Education and Art Commission.
- May 11, 1911—Final construction plans approved by Art Commission.
- May 22, 1911—Final construction plans certified by Art Commission.
- June 23, 1911—Final construction plans approved by Building Committee—Board of Education.
- June 28, 1911—Final construction plans approved by Board of Education.
- June 28, 1911—Construction plans and application filed in Bureau of Buildings, Manhattan.
- July 6, 1911—Manuscript of general construction specifications sent to printer.

- July 20, 1911—Application disapproved by Bureau of Buildings, Manhattan.
- July 22, 1911—Amendment filed by Board of Education in Bureau of Buildings, Manhattan.
- July 26, 1911—Memorandum from Examiner of the Bureau of Buildings to Chief Engineer, asking if temporary terra cotta wall could be accepted.
- July 26, 1911—Permit applied for in Highways Department for areas outside of building line.
- July 27, 1911—Answer in the negative by Chief Engineer.
- July 29, 1911—Amendment disapproved by Bureau of Buildings.
- Aug. 1, 1911—Highways Department notified Board of Education permit was not necessary.
- Aug. 10, 1911*—New amendment filed in Bureau of Buildings.
- Aug. 14, 1911—Final proof general construction specifications sent to printer.
- Aug. 16, 1911—Application approved by Bureau of Buildings.
- Aug. 19, 1911—General construction specifications printed.
- Aug. 22, 1911—General construction plans filed in Department of Water Supply, Gas and Electricity.
- Aug. 28, 1911—General construction plans approved by the Department of Water Supply, Gas and Electricity.
- Aug. 28-29, 1911—General construction plans filed in Department of Finance.
- Sept. 1, 1911—General construction plans received by Assistant Engineer, Department of Finance.
- Sept. 14, 1911—General construction plans approved by Department of Finance.
- Sept. 14, 1911—General construction plans approved by Comptroller.
- Sept. 19, 1911—General construction bids opened.
- Sept. 20, 1911—General construction contract approved by Board of Education.
- Sept. 23, 1911—Board of Education acknowledge receipt of approval from Board of Estimate and Apportionment.
- Sept. 26, 1911***—General construction contract referred to Department of Finance.
- Nov. 6, 1911***—General construction contract approved by Department of Finance.

HEATING AND VENTILATING

- July 6, 1912—Manuscript of heating and ventilating specifications sent to printer.
- July 17-18, 1912—Heating and ventilating plans filed in Department of Water Supply, Gas and Electricity.

- July 29, 1912—Heating and ventilating plans approved by Department of Water Supply, Gas and Electricity.
- Aug. 2, 1912—Final proof of heating and ventilating specifications sent to printer.
- Aug. 8, 1912*—Heating and ventilating plans filed by Board of Education in Department of Finance.
- Aug. 9, 1912—Heating and ventilating specifications printed.
- Sept. 4, 1912—Heating and ventilating bids opened.
- Sept. 18, 1912*—Board of Education acknowledge receipt of approval of Board of Estimate and Apportionment.

ELECTRICAL WORK

- May 22, 1912—Manuscript of electrical specifications sent to printer.
- June 5-10, 1912—Electrical plans filed in Department of Water Supply, Gas and Electricity.
- Aug. 2, 1912—Electrical plans approved by the Department of Water Supply, Gas and Electricity.
- Aug. 5, 1912*—Electrical plans sent to Department of Finance.
- Aug. 5, 1912—Final proof of electrical specifications sent to printer.
- Aug. 12, 1912—Electrical specifications printed.
- Aug. 15, 1912*—Board of Education acknowledge approval of Board of Estimate and Apportionment.
- Sept. 4, 1912—Electrical bids opened.

SCHOOL NO. 92—QUEENS

DATA PRELIMINARY TO BUILDING DESIGN

- Feb. 24, 1902—Committee on Sites referred to a sub-committee a resolution adopted by the School Board of Queens, that Board of Education acquire a site at Park Avenue, Evergreen and Randall Streets.
- June 19, 1902—Committee on Sites placed above resolution on file.
- Apr. 19, 1906—Committee on Sites recommended that property on Park Avenue, DeWitt and National Streets be approved as a site for a new building, pending financial ability after receiving recommendations from a district superintendent, re sites in Queens.
- June 22, 1906—Committee on Sites moved that above site be presented to Board of Education.
- Apr. 3, 1907—Committee on Sites referred to the acting chairman with power, a communication, re delay in site approval, which submitted alternative sites at Park Avenue, Randall and Grinnell Avenues and at Park Avenue and National Street.

- Sept. 25, 1907—Board of Education selected a site at Park Avenue, Grinnell and Randall Streets, assessed value \$8,900.
- Jan. 31, 1908—Board of Estimate and Apportionment authorized purchase at not more than \$24,500.
- Mar. 20, 1908—Title vested.
- Apr. 22, 1908—Board of Education requested of Board of Estimate and Apportionment \$182,000 for construction of 48-room building to relieve Public Schools 16, 19, and 15, in which 1,272 pupils were on part time.
- Apr. 24, 1908—Board of Estimate and Apportionment authorized \$182,000 for construction.
- May 26, 1908—Board of Aldermen approved.
- June 4, 1908—Mayor approved.
- Jan. 27, 1909—Board of Education approved final plans for construction.
- Apr. 28, 1909—Board of Education requested of Board of Estimate and Apportionment \$130,000 in addition to \$182,000 authorized April 24, 1908, in order to erect a 48-room building.
- Oct. 29, 1909—Board of Estimate and Apportionment authorized \$130,000.
- Dec. 14, 1909—Board of Aldermen approved.
—Mayor vetoed.
- Dec. 6, 1909—Committee on Buildings awarded contract for general construction of 92 Queens at \$281,000.
- Dec. 22, 1909—Board of Education approved of action of Committee on Buildings.
- Dec. 29, 1909 } —Board of Education requested of Board of Estimate
Jan. 12, 1910 } and Apportionment \$130,000 additional funds for
Mar. 23, 1910 } Public School 92.
- Apr. 27, 1910—Suit brought against City by Contractor, to whom contract was awarded.
- Nov. 26, 1910—Letter from office of Corporation Counsel advising the Board of Education of its status with regard to Contractor.
- Dec. 14, 1910—Board of Education withdrew conditional award of contract made December 22, 1909. Board of Education authorized Superintendent of School Buildings to take steps toward erection of 24-room building.
- Apr. 25, 1912—Board of Estimate and Apportionment authorized \$56,500 for interior construction and equipment of Public School 92, Queens.

GENERAL CONSTRUCTION

- Apr. 24, 1908—Board of Estimate and Apportionment appropriated \$182,000 for addition to building.
- May 20, 1908—Approved by Board of Aldermen.
- June 4, 1908—Approved by Mayor.
- Dec. 8, 1908—Final plans submitted to Art Commission.
- Jan. 12, 1909—Final plans for general construction approved by Art Commission.
- Jan. 18, 1909—Final plans certified by Art Commission.
- Nov. 5, 1909—New set of final plans submitted to Art Commission.
- Nov. 9, 1909—New set of final plans approved by Art Commission.
- Nov. 19, 1909—New set of final plans certified by Art Commission.
- Mar. 11, 1911—Preliminary construction plans submitted to Art Commission for new construction.
- Mar. 14, 1911—Meeting of Art Commission in which the Committee decided that the building intended was not up to standard of school architecture.
- Apr. 11, 1911—Preliminary Construction plan approved by Art Commission.
- Apr. 20, 1911—Preliminary construction plans certified by Art Commission.
- May 3, 1911—Final construction plans submitted to Art Commission.
- May 11, 1911—Final construction plans approved by Art Commission.
- May 22, 1911—Final construction plans certified by Art Commission.
- June 19, 1911—Building Committee, Board of Education, approved final construction plans.
- June 28, 1911—Board of Education approved final construction plans.
- July 6, 1911—Manuscript of general construction specifications sent to printer.
- July 11, 1911—General construction plans filed in Bureau of Buildings, Queens.
- July 21, 1911—Final proof of general construction specifications sent to printer.
- Aug. 2, 1911—General construction plans approved by Bureau of Buildings, Queens.
- Aug. 3, 1911—Specifications for general construction printed.
- Aug. 4, 1911—General construction plans filed in Department of Water Supply, Gas and Electricity.
- Aug. 17, 1911—General construction plans approved by Department of Water Supply, Gas and Electricity.
- Aug. 21, 1911—Board of Education acknowledge receipt of approval from Department of Water Supply, Gas and Electricity.

- Sept. 7, 1911—General construction plans transmitted to Department of Finance.
- Sept. 11, 1911—General construction plans received by Assistant Engineer of the Department of Finance.
- Sept. 18, 1911—General construction plans approved by the Department of Finance.
- Sept. 18, 1911—General construction plans approved by the Comptroller.
- Sept. 22, 1911—Board of Education acknowledge receipt of approval.
- Oct. 2, 1911—General construction bids opened.
- Oct. 11, 1911—General construction contract approved by Board of Education.
- Oct. 25, 1911—A change was made in floor construction and plans were again filed in Bureau of Buildings, Queens.
- Oct. 26, 1911***—General construction contract approved by Department of Finance.
- Nov. 16, 1911—Plans again approved by Bureau of Buildings for general construction.

PLUMBING AND DRAINAGE

- Nov. 14, 1911*—Board of Education acknowledge approval of plumbing and drainage plans.
- June 3, 1912—Plumbing and drainage bids opened.
- June 12, 1912—Plumbing and drainage contract approved by Board of Education.
- June 18, 1912*—Plumbing and drainage contract approved by Department of Finance.

HEATING AND VENTILATING

- May 6, 1912—Manuscript of heating and ventilating specifications sent to printer.
- May 14, 1912—Final proof of heating and ventilating specifications sent to printer.
- May 20, 1912—Specifications for heating and ventilating printed.
- May 20-21, 1912—Heating and ventilating plans transmitted to Department of Finance.
- May 24, 1912—Heating and ventilating plans received by Assistant Engineer, Department of Finance.
- May 31, 1912—Heating and ventilating plans approved by Department of Finance.
- June 3, 1912—Heating and ventilating bids opened.
- June 6, 1912—Heating and ventilating plans approved by Board of Estimate and Apportionment.

- June 12, 1912—Board of Education received notice of approval of heating and ventilating plans by Board of Estimate and Apportionment. Acknowledged June 13, 1912.
- June 26, 1912—Contract approved by Board of Education.
- June 29, 1912**—Contract approved by Department of Finance.
- July 5, 1912—Heating and ventilating contract filed in Department of Finance.
- July 19, 1912—Actual date of contract.

ELECTRICAL WORK

- Jan. 19, 1912—Manuscript of electrical specifications sent to printer.
- Jan. 27, 1912—Electrical plans filed in Department of Water Supply, Gas and Electricity.
- Mar. 4, 1912—Final proof sent to printer.
- Mar. 5, 1912—Electrical plans approved by Department of Water Supply, Gas and Electricity.
- Mar. 7, 1912—Electrical specifications printed.
- Apr. 23-24, 1912—Electrical plans transmitted to Department of Finance.
- Apr. 26, 1912—Electrical plans received by Assistant Engineer, Department of Finance.
- May 17, 1912—Electrical plans approved by the Department of Finance.
- May 27, 1912—Electrical bids opened.
- May 31, 1912—Electrical plans approved by Board of Estimate and Apportionment.
- June 4, 1912—Letter received by Board of Education from Board of Estimate and Apportionment, in re electrical equipment.
- June 8, 1912—Board of Education acknowledge receipt of approval from Board of Estimate and Apportionment.
- June 12, 1912—Electrical contract approved by Board of Education.
- July 13, 1912***—Electrical contract approved by Department of Finance.

FURNITURE

- June 4, 1912—Manuscript furniture specifications sent to printer.
- June 13, 1912—Final proof of furniture specifications sent to printer.
- June 19, 1912—Furniture specifications printed.
- June 20-21, 1912—Furniture plans submitted to Department of Finance.
- June 26, 1912—Furniture plans received by Assistant Engineer of Department of Finance.
- July 3, 1912—Furniture plans approved by Department of Finance.

- July 11, 1912—Furniture plans approved by Board of Estimate and Apportionment.
- July 22, 1912—Furniture bids opened.
- July 24, 1912—Furniture contract approved by Board of Education.
- July 24, 1912—Notice received by Board of Education from Board of Estimate and Apportionment of approval of furniture plans.
- July 26, 1912—Board of Education acknowledge receipt of approval from Board of Estimate and Apportionment.

SCHOOL NO. 43—BRONX

DATA PRELIMINARY TO BUILDING DESIGN

Addition built on original site

- Nov. 23, 1910—Board of Education requested of Board of Estimate and Apportionment \$106,380 for addition.
- Dec. 1, 1910—Board of Estimate and Apportionment referred request to Corporate Stock Budget Committee.
- Feb. 6, 1911—Board of Education requested of Board of Estimate and Apportionment \$125,700 for addition.
- Mar. 9, 1911—Board of Estimate and Apportionment authorized \$125,700 for addition.

GENERAL CONSTRUCTION

- Apr. 7, 1911—Preliminary construction plans submitted to Art Commission.
- Apr. 11, 1911—Preliminary construction plans approved by Art Commission.
- Apr. 20, 1911—Preliminary construction plans certified by Art Commission.
- May 6, 1911—Final construction plans submitted to the Art Commission.
- May 11, 1911—Final construction plans approved by Art Commission.
- May 22, 1911—Final construction plans certified by Art Commission.
- June 5, 1911—Building Committee of the Board of Education approved general construction plans.
- June 14, 1911—Board of Education approved general construction plans.
- July 1, 1911—General construction plans and application filed with the Bureau of Buildings, Bronx.
- July 13, 1911—General construction plans examined by the Bureau of Buildings, Bronx.

- July 14, 1911—General construction plans disapproved by the Bureau of Buildings, Bronx.
- July 17, 1911—Letter from Board of Education on subject of disapproval.
- July 17, 1911—Manuscript of general construction specifications sent to printer.
- July 21, 1911—Letter to Board of Education from Bureau of Buildings on subject of disapproval.
- July 24, 1911—Request by Bureau of Buildings for modification of application.
- July 25, 1911—Bureau of Buildings approved modification of general construction plans.
- July 27, 1911—General construction plans approved by Bureau of Buildings.
- July 28, 1911—Board of Education notified of approval by Bureau of Buildings.
- Aug. 25, 1911—Final proof of general construction specifications sent to printer.
- Aug. 30, 1911—Specifications printed for general construction.
- Sept. 5, 1911—General construction plans filed in the Department of Water Supply, Gas and Electricity.
- Sept. 6, 1911—General construction plans approved by the Department of Water Supply, Gas and Electricity.
- Sept. 12, 1911**—Board of Education acknowledged receipt of approval of Department of Water Supply, Gas and Electricity.
- Sept. 12 or 13, 1911—General construction plans transmitted to Department of Finance.
- Sept. 16, 1911—General construction plans received by the Assistant Engineer of the Department of Finance.
- Sept. 27, 1911—General construction plans approved by the Department of Finance.
- Oct. 5, 1911—General construction plans approved by Board of Estimate and Apportionment.
- Oct. 17, 1911—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
- Oct. 16, 1911—Bids for general construction opened.
- Oct. 25, 1911—Contract for general construction approved by Board of Education.
- Oct. 27, 1911—Contract for general construction filed in Department of Finance.
- Nov. 9, 1911—Actual date of contract.
- Nov. 22, 1911**—Contract for general construction approved by the Department of Finance.

PLUMBING AND DRAINAGE

- July 1, 1911—Plumbing and drainage application filed with Bureau of Buildings, Bronx.
- July 31, 1911—Plumbing and drainage plans examined by Bureau of Buildings, Bronx.
- Aug. 1, 1911—Plumbing and drainage plans approved by Bureau of Buildings, Bronx.

HEATING AND VENTILATING

- June 5, 1912—Manuscript of heating and ventilating specifications sent to printer.
- June 13, 1912—Final proof of heating and ventilating specifications sent to printer.
- June 13 or 14, 1912—Heating and ventilating plans transmitted to Department of Finance.
- June 17, 1912—Heating and ventilating plans received by the Assistant Engineer of the Department of Finance.
- June 17, 1912—Heating and ventilating specifications printed.
- June 27, 1912—Heating and ventilating plans approved by the Department of Finance.
- July 8, 1912—Heating and ventilating bids opened.
- July 10, 1912—Heating and ventilating contract approved by the Board of Education.
- July 11, 1912—Heating and ventilating plans approved by the Board of Estimate and Apportionment.
- July 26, 1912—Board of Education acknowledged approval of Board of Estimate and Apportionment.

ELECTRICAL WORK

- May 27, 1912—Manuscript of electrical specifications sent to printer.
- June 4, 1912—Electrical plans filed in Department of Water Supply, Gas and Electricity.
- June 20, 1912—Electrical plans approved by Department of Water Supply, Gas and Electricity.
- June 22, 1912—Final proof of electrical specifications sent to printer.
- June 22 or 24, 1912—Electrical plans transmitted to Department of Finance.
- June 26, 1912—Electrical plans received by the Assistant Engineer of the Department of Finance.
- June 28, 1912—Specifications for electrical work printed.
- July 5, 1912—Electrical plans approved by the Department of Finance.
- July 15, 1912—Bids for electrical work opened.

- July 17, 1912—Electrical plans approved by Board of Estimate and Apportionment.
 July 24, 1912—Contract for electrical work approved by Board of Education.
 July 26, 1912—Board of Education acknowledge approval of Board of Estimate and Apportionment.

FURNITURE

- July 10, 1912—Manuscript of furniture specifications sent to printer.
 July 17, 1912—Final proof of furniture specifications sent to printer.
 July 22, 1912—Furniture specifications printed.
 July 24, 1912*—Furniture plans transmitted to the Department of Finance.
 Aug. 9, 1912*—Board of Education acknowledge receipt of approval from Board of Estimate and Apportionment.
 Aug. 26, 1912—Bids for furniture opened.
 Sept. 11, 1912—Contract approved by Board of Education.

ADDITION TO SCHOOL NO. 39—BRONX

DATA PRELIMINARY TO BUILDING DESIGN

Addition built on original site

- | | | |
|----------------|---|--|
| May 22, 1907 | } | —Board of Education requested of Board of Estimate and Apportionment funds for addition of 24 rooms. |
| Sept. 25, 1907 | | |
| Oct. 9, 1907 | | |
| Feb. 3, 1908 | | |
| Feb. 26, 1908 | } | —Board of Education requested of Board of Estimate and Apportionment \$157,000 for addition. |
| Apr. 28, 1909 | | |
| Dec. 29, 1909 | | |
| Jan. 12, 1910 | | |
| Mar. 23, 1910 | | —Board of Education requested of Board of Estimate and Apportionment \$189,400 for addition. |
| Feb. 6, 1911 | | —Board of Education requested of Board of Estimate and Apportionment \$285,500 for construction and equipment of addition. |
| Mar. 9, 1911 | | —Board of Estimate and Apportionment authorized \$285,500 for construction and equipment of addition. |

GENERAL CONSTRUCTION

- Nov. 5, 1909—Final plans for general construction of addition submitted to Art Commission.
 Nov. 9, 1909—Final plans for general construction approved by Art Commission.

- Nov. 19, 1909—Final plans for general construction certified by Art Commission.
- Mar. 9, 1911—Board of Estimate and Apportionment authorized \$285,500 for construction of addition.
(Section No. 169—Charter)
- May 10, 1911—Preliminary plans substituted in Art Commission.
- May 11, 1911—Preliminary plans approved by Art Commission.
- May 22, 1911—Preliminary plans certified by Art Commission.
- July 24, 1911—Final construction plans transmitted to Art Commission.
- Aug. 8, 1911—Final construction plans approved by Art Commission.
- Aug. 11, 1911—Final construction plans certified by Art Commission.
- Oct. 23, 1911—Building Committee, Board of Education, approved final construction plans.
- Oct. 25, 1911—Board of Education approved final construction plans.
- Nov. 9, 1911—Manuscript of general construction specifications sent to printer.
- Dec. 1, 1911—Plans and application for general construction filed in Bureau of Buildings.
- Dec. 7, 1911—Application made by Board of Education to Department of Public Works for vault permit.
- Dec. 7, 1911—General construction plans examined by Bureau of Buildings.
- Dec. 8, 1911—General construction plans disapproved by Bureau of Buildings.
- Dec. 12, 1911—Final proof of general construction specifications sent to printer.
- Dec. 12, 1911—Letter from Board of Education to Bureau of Buildings, in re application.
- Dec. 13, 1911—Letter from Bureau of Buildings to Board of Education, in re application.
- Dec. 18, 1911—General construction specifications printed.
- Dec. 19, 1911—General construction plans filed in Department of Water Supply, Gas and Electricity.
- Dec. 20, 1911—General construction plans filed in Department of Water Supply, Gas and Electricity.
- Jan. 2, 1912—General construction plans approved by Department of Water Supply, Gas and Electricity.
- Jan. 3, 1912—General construction plans sent to Department of Finance.
- Jan. 6, 1912—General construction plans received by Assistant Engineer, Department of Finance.
- Jan. 19, 1912—General construction plans approved by Department of Finance.

- Jan. 25, 1912—General construction plans approved by Board of Estimate and Apportionment.
- Feb. 5, 1912—Amendment to general construction plans filed by Board of Education in the Bureau of Buildings.
- Feb. 5, 1912—Board of Education acknowledges receipt of approval of Board of Estimate and Apportionment.
- Feb. 6, 1912—General construction plans approved by Bureau of Buildings, Bronx.
- Feb. 13, 1912—Bids for general construction opened.
- Feb. 14, 1912—Actual date of award of contract by Board of Education.
- Feb. 21, 1912—After some communications back and forth vault permit No. 8312 was granted to Board of Education.
- Feb. 21, 1912—Contract filed in Department of Finance.
- Feb. 28, 1912**—Contract for general construction approved by Board of Education.
- Feb. 28, 1912—Actual date of contract.
- Mar. 12, 1912**—General construction contract approved by Department of Finance.

PLUMBING AND DRAINAGE

- Dec. 1, 1911—Plumbing and drainage application filed in Bureau of Buildings, Bronx.
- Feb. 16, 1912—Plumbing and drainage plans examined by Bureau of Buildings, Bronx.
- Feb. 16, 1912—Plumbing and drainage plans approved by Bureau of Buildings, Bronx.

HEATING AND VENTILATING

- Sept. 14, 1912—Manuscript of heating and ventilating specifications sent to printer.
- Sept. 19, 1912*—Board of Education transmitted plans to Department of Water Supply, Gas and Electricity.
- Oct. 4, 1912—Board of Education acknowledged receipt of approval of Department of Water Supply, Gas and Electricity.
- Oct. 5, 1912—Final proof of heating and ventilating specifications sent to printer.

ELECTRICAL WORK

- Aug. 29, 1912—Manuscript of electrical specifications sent to printer.
- Sept. 18, 1912*—Board of Education acknowledged transmission to Department of Water Supply, Gas and Electricity.

SCHOOL NO. 173—BROOKLYN

DATA PRELIMINARY TO BUILDING DESIGN

- Nov. 19, 1909—City Superintendent reported to Committee on Sites great need of school between Public Schools 63 and 149, in the neighborhood of Pennsylvania and Glenmore Avenues; Public School 63 had 110 on part time and Public School 149 was growing at a rate of 700 per year.
- Dec. 1, 1909—Committee on Sites referred above recommendation to a sub-committee.
- Feb. 2, 1910—Sub-committee recommended a site which was referred to Comptroller.
- Apr. 6, 1910—Committee on Sites decided to present the site on Pennsylvania Avenue and Glenmore Avenue at next meeting of Board of Education.
- Apr. 27, 1910—Board of Education selected site, assessed value \$28,500.
- Oct. 19, 1910—Committee on Sites placed site on Pennsylvania, Liberty, and Glenmore Avenues as first in urgency.
- Nov. 16, 1910—City Superintendent placed above site first in priority. Committee on Sites moved and adopted that City authorities be urged to acquire immediately various sites, above site first in priority.
- Jan. 11, 1911—Committee on Sites reported to Board of Education that acquisition of this site was pending action of City authorities.
- Feb. 6, 1911—Board of Education requested of Board of Estimate and Apportionment \$336,030 for construction, equipment, and furniture for new building.
- Apr. 6, 1911—Board of Estimate and Apportionment authorized purchase of site on Pennsylvania, Glenmore, and Liberty Avenues for not more than \$48,500.
- Apr. 12, 1911—Board of Education received request of February 6, 1911.
- May 18, 1911—Board of Estimate and Apportionment amended resolution of April 6, 1911, authorizing purchase of site for not more than \$48,500 to one authorizing purchase of one plot at private sale for not more than \$22,500 and of another plot at private sale for \$12,000, and authorizing condemnation proceedings for the remainder.
- June 1, 1911—Board of Estimate and Apportionment amended description of plot in resolution and amendment of April 16 and May 18, 1911.

- July 17, 1911—Board of Estimate and Apportionment authorized \$366,030 for construction, equipment, and furniture for new building.
- July 25, 1911—Board of Aldermen approved.
- Sept. 19, 1911—Mayor returned without approval or disapproval.
- Sept. 19, 1911—Oaths of Commissioners of Estimate and Appraisal filed and title vested.
- Oct. 11, 1911—Board of Education selected addition to site 5 feet by 150 feet in rear of site.
- Oct. 19, 1911—Board of Estimate and Apportionment amended resolution of June 1, 1911, authorizing purchase at private sale for \$12,000 to authorization of condemnation proceedings.
- Nov. 23, 1911—Board of Estimate and Apportionment authorized purchase of plot at rear of site formerly authorized for not more than \$1,000.
- Dec. 23, 1911—Commissioners of Estimate and Appraisal appointed.
- Jan. 10, 1912—Title vested for additional plot of 5 feet by 150 feet.
- Jan. 25, 1912—Title vested for last parcel of plot.

GENERAL CONSTRUCTION

- July 10, 1911—Preliminary construction plans submitted to Art Commission.
- July 11, 1911—Preliminary construction plans approved by the Art Commission.
- July 17, 1911—Preliminary construction plans certified by the Art Commission.
- July 17, 1911—Board of Estimate and Apportionment authorized appropriation of \$366,030 for construction of new building.
- July 25, 1911—Appropriation approved by the Board of Aldermen.
- Aug. 3, 1911—Final construction plans submitted to Art Commission.
- Aug. 8, 1911—Final construction plans approved by the Art Commission.
- Aug. 11, 1911—Final construction plans certified by the Art Commission.
- Sept. 19, 1911—Appropriation received from Mayor without approval or disapproval.
- Sept. 28, 1911—Manuscript of general construction specifications sent to printer.
- Oct. 9, 1911—Plans approved by the Building Committee of the Board of Education.
- Oct. 11, 1911—Plans approved by the Board of Education.

- Nov. 1, 1911—Final proof of general construction specifications sent to printer.
- Nov. 8, 1911—General construction specifications printed.
- Nov. 9, 1911—General construction plans filed with the Department of Water Supply, Gas and Electricity.
- Nov. 10, 1911—General construction plans filed with the Bureau of Buildings, Brooklyn.
- Nov. 16, 1911—General construction plans examined by the Bureau of Buildings, Brooklyn.
- Nov. 21, 1911—General construction plans disapproved by the Bureau of Buildings, Brooklyn.
- Nov. 25, 1911—General construction plans approved by the Department of Water Supply, Gas and Electricity.
- Nov. 28, 1911—Board of Education acknowledged receipt of approval of Department of Water Supply, Gas and Electricity.
- Nov. 28 or 29, 1911—General construction plans sent to Department of Finance.
- Dec. 2, 1911—General construction plans received by the Assistant Engineer of the Department of Finance.
- Dec. 4, 1911—General construction plans corrected by the Board of Education.
- Dec. 4, 1911—Permit No. 7393/11 issued by the Bureau of Buildings, Brooklyn.
- Dec. 26, 1911—General construction plans approved by the Department of Finance.
- Jan. 4, 1912—General construction plans approved by the Board of Estimate and Apportionment.
- Jan. 18, 1912—Board of Education acknowledged receipt of approval from the Board of Estimate and Apportionment.
- Feb. 19, 1912—Bids for general construction opened.
- Feb. 28, 1912—Bids for general construction approved by the Board of Education.
- Mar. 8, 1912—Contract filed in the Department of Finance.
- Mar. 18, 1912—Actual date of contract.
- Apr. 1, 1912**—Contract approved by the Department of Finance.

PLUMBING AND DRAINAGE

- Nov. 10, 1911—Plumbing and drainage plans submitted to the Bureau of Buildings, Brooklyn.
- Nov. 21, 1911—Plumbing and drainage plans examined by the Bureau of Buildings, Brooklyn.
- Nov. 21, 1911—Plumbing and drainage plans disapproved by the Bureau of Buildings, Brooklyn.

- Nov. 27, 1911—Plumbing and drainage plans approved by the Bureau of Buildings, Brooklyn.
- Feb. 19, 1912—Bids for plumbing and drainage opened.
- Feb. 28, 1912—Contract approved by the Board of Education.
- Apr. 9, 1912*—Contract approved by the Department of Finance.
- Aug. 22, 1912—Board of Education acknowledged transmission of plans to Department of Water Supply, Gas and Electricity.
- Sept. 5, 1912—Board of Education acknowledged receipt of approval of Department of Water Supply, Gas and Electricity.

HEATING AND VENTILATING

- Aug. 15, 1912—Manuscript of heating and ventilating specifications sent to printer.
- Aug. 22, 1912—Board of Education acknowledged transmission of plans to Department of Water Supply, Gas and Electricity.
- Aug. 31, 1912—Board of Education acknowledged receipt of approval of Department of Water Supply, Gas and Electricity.
- Sept. 3, 1912—Final proof of heating and ventilating specifications sent to printer.
- Sept. 5, 1912*—Board of Education acknowledged transmission of heating and ventilating plans to the Department of Finance.
- Sept. 9, 1912—Heating and ventilating specifications printed.
- Sept. 18, 1912—Board of Education acknowledged approval of Board of Estimate and Apportionment.
- Sept. 30, 1912—Bids opened for heating and ventilating.
- Oct. 9, 1912—Bids approved by the Board of Education.

ELECTRICAL WORK

- July 12, 1912—Manuscript of electrical specifications sent to printer.
- Aug. 7, 1912—Board of Education acknowledged receipt of plans from Department of Water Supply, Gas and Electricity.
- Aug. 26, 1912—Board of Education acknowledged approval of plans of Department of Water Supply, Gas and Electricity.
- Aug. 27, 1912—Board of Education acknowledged transmission of plans to the Department of Finance.
- Aug. 27, 1912—Final proof of electrical specifications sent to printer.
- Sept. 3, 1912—Electrical specifications printed.

- Sept. 18, 1912—Board of Education acknowledged receipt of approval from the Department of Finance.
- Sept. 23, 1912—Bids for electrical work opened.
- Sept. 25, 1912—Bids for electrical work approved by the Board of Education.

SCHOOL NO. 174—BROOKLYN

DATA PRELIMINARY TO BUILDING DESIGN

- Apr. 19, 1906—Committee on Sites placed on special calendar of Approved Sites the recommendation of the City Superintendent for a site between Alabama and Newport Avenues, southeast of Public School 109.
- June 7, 1906—Committee on Sites recommended selection of plot on north side of Newport Avenue, running from Alabama to Georgia Avenues.
- Oct. 24, 1906—Board of Education selected second site, assessed value \$9,500.
- Dec. 14, 1908—City Superintendent recommended site between Public Schools 109, 72, and 149. Public Schools 109 and 72 had 2,565 pupils on part time, and district 39 had 11,081 and district 40 had 8,212 pupils on part time.
- May 11, 1909—City Superintendent recommended site in vicinity of Riverdale or Newport and Alabama Avenues for 48-room building to relieve Public Schools 72, 109, and 149, where 3,373 children were on part time. Committee on Sites resolved that Board of Education urge Board of Estimate and Apportionment to take immediate action on resolution of Board of Education of October 24, 1906.
- May 12, 1909—Board of Education requested of Board of Estimate and Apportionment to take immediate action in this matter.
- Nov. 19, 1909—City Superintendent reported in letter that site most needed was in district 40, one on Newport and Alabama Avenues, recommended three years before by the Board of Superintendents.
- Dec. 1, 1909—Committee on Sites reported that matter had been pending before Board of Estimate and Apportionment since October 24, 1906, awaiting report of Comptroller and recommended that a committee be sent to the Comptroller urging him to use his influence with the Board of Estimate and Apportionment.

- Feb. 2, 1910—City Superintendent reported need for above site. District 40 had 5,768 pupils on part time and Public School 149 had 2,840 on part time.
- Apr. 4, 1910—Board of Superintendents reported to Committee on Sites that need of site on Georgia, Alabama, and Newport Avenues was second in urgency.
- June 17, 1910—City Superintendent reported need of site on Newport, Alabama, and Georgia Avenues, to relieve Public School 108 having 1,852 pupils on part time and also more distant schools.
- Oct. 19, 1910—A report on sites placed that above as fourth in urgency.
- Nov. 2, 1910—City Superintendent reported above site as third in urgency. He also reported to Committee on Sites that Long Island railroad was putting through tracks over this site and it would be desirable to select a site further north. Local School Board and District Superintendent recommended a site on Alabama and Dumont Avenues, which would give relief to Public School 109, where 2,337 pupils were on part time.
- Nov. 16, 1910—Committee on Sites resolved that President of Board of Education urge City authorities for immediate acquisition of site on Newport, Alabama, and Georgia Avenues.
- Mar. 29, 1911—Committee on Sites rescinded action of June 7, 1906, and selected site on Alabama, Dumont, and Williams Avenues.
- Mar. 29, 1911—Board of Education rescinded action of October 24, 1906, and May 12, 1909, and selected a site on Alabama, Dumont, and Williams Avenues, assessed value with other property \$59,500.
- Apr. 6, 1911—Board of Estimate and Apportionment authorized purchase for not more than \$35,000.
- Apr. 12, 1911—Contract of sale executed for \$35,000.
- May 10, 1911—Board of Education made requisition of Comptroller for \$35,000.
- May 23, 1911—Title vested.
- Feb. 6, 1911 } —Board of Education requested of Board of Estimate
Apr. 12, 1911 } and Apportionment \$366,030 for construction,
 } equipment, and furniture of new building.
- July 17, 1911—Board of Estimate and Apportionment authorized \$366,030 for construction, equipment, and furniture for building.
- July 25, 1911—Board of Aldermen approved.
- Sept. 19, 1911—Mayor returned without approval or disapproval.

GENERAL CONSTRUCTION

- Oct. 30, 1911—Preliminary construction plans submitted to Art Commission.
- Nov. 9, 1911—Manuscript of construction specifications sent to printer.
- Nov. 14, 1911—Preliminary construction plans approved by Art Commission.
- Nov. 29, 1911—Preliminary construction plans certified by Art Commission.
- Dec. 1, 1911—Final construction plans submitted to the Art Commission.
- Dec. 9, 1911—Final proof of general construction specifications sent to printer.
- Dec. 11, 1911—Building Committee of Board of Education approved final construction plans.
- Dec. 12, 1911—Final construction plans approved by the Art Commission.
- Dec. 13, 1911—Board of Education approved final construction plans.
- Dec. 14, 1911—Final proof of general construction specifications sent to printer.
- Dec. 15, 1911—General construction plans filed with the Department of Water Supply, Gas and Electricity.
- Dec. 26, 1911—Art Commission certified action on final construction plans.
- Dec. 30, 1911—General construction plans and application filed with the Bureau of Buildings, Brooklyn.
- Jan. 2, 1912—General construction plans approved by the Department of Water Supply, Gas and Electricity.
- Jan. 4, 1912—General construction plans examined by the Bureau of Buildings, Brooklyn.
- Jan. 4, 1912—General construction plans transmitted to the Department of Finance.
- Jan. 6, 1912—General construction plans received by the Assistant Engineer of the Department of Finance.
- Jan. 16, 1912—General construction plans approved by the Department of Finance.
- Jan. 18, 1912—Plans for general construction approved by the Board of Estimate and Apportionment.
- Jan. 22, 1912—General construction plans corrected by the Board of Education for the Bureau of Buildings.
- Jan. 22, 1912—Permit No. 312/12 issued by Bureau of Buildings for general construction.
- Jan. 26, 1912—Board of Education acknowledged receipt of approval from Board of Estimate and Apportionment.
- Feb. 5, 1912—Bids for general construction opened.

- Feb. 5, 1912—Contract for general construction approved by Board of Education.
- Feb. 23, 1912—Contract for general construction filed in the Department of Finance.
- Mar. 11, 1912—Actual date of contract.
- Mar. 19, 1912**—Contract for general construction approved by the Department of Finance.

PLUMBING AND DRAINAGE

- Nov. 9, 1911—Manuscript of plumbing and drainage specifications sent to printer.
- Dec. 9, 1911—Final proof of plumbing and drainage specifications sent to printer.
- Dec. 14, 1911—Plumbing and drainage specifications printed.
- Dec. 30, 1911—Plans for plumbing and drainage filed with the Bureau of Buildings, Brooklyn.
- Jan. 4, 1912—Plans for plumbing and drainage transmitted to the Department of Finance.
- Jan. 9, 1912—Plans for plumbing and drainage examined by the Bureau of Buildings, Brooklyn.
- Jan. 17, 1912—Plans for plumbing and drainage approved by the Bureau of Buildings, Brooklyn.
- Jan. 26, 1912—Board of Education acknowledge receipt of approval of Board of Estimate and Apportionment.
- Feb. 5, 1912—Bids for plumbing and drainage opened.
- Feb. 5, 1912—Contract approved by Board of Education.
- Mar. 12, 1912*—Contract approved by Department of Finance.
- Aug. 8, 1912—Board of Education acknowledged transmission of plans to the Department of Water Supply, Gas and Electricity.
- Aug. 12, 1912—Board of Education acknowledged approval of Department of Water Supply, Gas and Electricity.

HEATING AND VENTILATING

- July 16, 1912—Manuscript of heating and ventilating specifications sent to printer.
- July 27, 1912—Final proof of heating and ventilating specifications sent to printer.
- Aug. 1, 1912—Heating and ventilating specifications printed.
- Aug. 3, 1912*—Board of Education acknowledged transmission of heating and ventilating plans to Department of Finance.
- Aug. 8, 1912*—Board of Education acknowledged transmission to Department of Water Supply, Gas and Electricity.

- Aug. 15, 1912—Board of Education acknowledged receipt of approval of plans from Department of Water Supply, Gas and Electricity.
- Sept. 4, 1912—Bids for heating and ventilating opened.
- Sept. 11, 1912—Bids for heating and ventilating approved by Board of Education.
- Sept. 18, 1912—Board of Education acknowledged receipt of approval from Board of Estimate and Apportionment.

ELECTRICAL WORK

- July 9, 1912—Manuscript of electrical specifications sent to printer.
- Aug. 2, 1912—Plans for electrical work filed in the Department of Water Supply, Gas and Electricity.
- Aug. 22, 1912—Plans for electrical work approved by the Department of Water Supply, Gas and Electricity.
- Aug. 26, 1912—Board of Education acknowledged receipt of approval of Department of Water Supply, Gas and Electricity.
- Aug. 27, 1912*—Board of Education acknowledged transmission to Department of Finance.
- Aug. 27, 1912—Final proof of electrical specifications sent to printer.
- Sept. 3, 1912—Electrical specifications printed.
- Sept. 16, 1912—Bids for electrical work opened.
- Sept. 18, 1912—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.

ADDITION TO SCHOOL NO. 72—MANHATTAN

DATA PRELIMINARY TO BUILDING DESIGN

- Feb. 1, 1906—Committee on Sites referred to the City Superintendent a recommendation of the Local School Board that property adjacent to Public School 72 be acquired.
- Mar. 8, 1906—Committee on Sites referred to a sub-committee the report of the Board of Superintendents disapproving of acquisition of site for new building on or near 105th Street, between Lexington and Third Avenues, but recommending that two lots on East 105th Street at rear of school building be acquired.
- Apr. 5, 1906—Committee on Sites recommended disapproval of acquisition of site.
- June 22, 1906—Committee on Sites rescinded action of April 5, 1906, and resolved to report site on 105th Street, between Avenues B and C to Board of Education.

- Oct. 24, 1906—Board of Education selected site, assessed value \$13,000.
- Jan. 4, 1907—Board of Estimate and Apportionment authorized condemnation proceedings.
- Mar. 26, 1907—Motion for appointment of Commissioners of Estimate and Appraisal.
- Apr. 4, 1907—Commissioners were appointed.
- June 11, 1907—Corporation Counsel wrote letter concerning party wall easement.
- June 26, 1907—Board of Education took action advised by Corporation Counsel.
- July 8, 1907—Board of Estimate and Apportionment amended action of January 4, 1907, making title subject to easement in party wall.
- Apr. 15, 1908—Title vested.
- June 17, 1910—Board of Superintendents reported "necessity for using following sites in the list you have submitted is so distant that we do not feel able to assign them any order of priority, East 105th Street, adjoining Public School 72, Manhattan."
- Feb. 6, 1911 } —Board of Education requested of Board of Estimate
Apr. 12, 1911 } and Apportionment \$52,000 for construction,
equipment, and furniture of addition.
- July 17, 1911—Board of Estimate and Apportionment authorized \$52,000 for addition.
- July 25, 1911—Board of Aldermen approved.
- Aug. 31, 1911—Mayor approved.

GENERAL CONSTRUCTION

- Dec. 6, 1911—Final construction plans submitted to the Art Commission.
- Dec. 7, 1911—General construction application sent to the Highways Department.
- Dec. 9, 1911—Permit for vaults issued by Highways Department to the Board of Education.
- Dec. 11, 1911—Final construction plans approved by the Building Committee of the Board of Education.
- Dec. 11, 1911—Letter of transmission forwarded to the Board of Education from the Department of Highways.
- Dec. 12, 1911—Final construction plans approved by the Art Commission.
- Dec. 13, 1911—Final construction plans approved by the Board of Education.

- Dec. 14, 1911—Manuscript of general construction specifications sent to printer.
- Dec. 26, 1911—Art Commission certified action on the final construction plans.
- Jan. 6, 1912—Final proof of general construction specifications sent to printer.
- Jan. 11, 1912—General construction specifications printed.
- Jan. 11, 1912—General construction plans filed with the Department of Water Supply, Gas and Electricity.
- Jan. 16, 1912—General construction plans approved by the Department of Water Supply, Gas and Electricity.
- Jan. 26 or 27, 1912—General construction plans sent to the Department of Finance.
- Jan. 29, 1912—General construction plans received by the Assistant Engineer of the Department of Finance.
- Jan. 30, 1912—General construction plans and application filed with the Bureau of Buildings, Manhattan.
- Feb. 5, 1912—General construction plans and application disapproved by the Bureau of Buildings, Manhattan.
- Feb. 7, 1912—General construction plans approved by the Department of Finance.
- Feb. 10, 1912—General construction amendment filed with the Bureau of Buildings, Manhattan.
- Feb. 15, 1912—General construction plans approved by the Board of Estimate and Apportionment.
- Feb. 16, 1912—General construction application approved by the Bureau of Buildings, Manhattan.
- Feb. 23, 1912—Board of Education acknowledged receipt of approval of Bureau of Buildings, Manhattan.
- Feb. 26, 1912—Board of Education acknowledged receipt of approval from Board of Estimate and Apportionment of construction plans.
- Mar. 4, 1912—Bids for general construction opened.
- Mar. 13, 1912—Contract for general construction approved by the Board of Education.
- Apr. 10, 1912***—Contract for general construction approved by the Department of Finance.

HEATING AND VENTILATING

- July 16, 1912—Manuscript of heating and ventilating specifications sent to printer.
- July 24, 1912—Plans for heating and ventilating filed with the Department of Water Supply, Gas and Electricity.

- Aug. 8, 1912—Plans approved by the Department of Water Supply, Gas and Electricity.
- Aug. 10, 1912—Final proof of heating and ventilating specifications sent to printer.
- Aug. 10, 1912*—Board of Education acknowledged transmission of plans to the Department of Finance.
- Aug. 16, 1912—Heating and ventilating specifications printed.
- Sept. 16, 1912—Bids for heating and ventilating opened.
- Sept. 18, 1912—Board of Education acknowledged receipt of approval from Board of Estimate and Apportionment of heating and ventilating plans.
- Sept. 25, 1912—Contract for heating and ventilating approved by the Board of Education.

ELECTRICAL WORK

- July 25, 1912—Manuscript of electrical specifications sent to printer.
- Aug. 2, 1912—Plans for electrical work filed with the Department of Water Supply, Gas and Electricity.
- Sept. 7, 1912—Plans for electrical work approved by the Department of Water Supply, Gas and Electricity.
- Sept. 10, 1912—Board of Education acknowledged receipt of approval of the Department of Water Supply, Gas and Electricity.
- Sept. 11, 1912—Final proof of electrical specifications sent to printer.
- Sept. 11, 1912*—Board of Education acknowledged transmission of plans to the Department of Finance.
- Sept. 16, 1912—Electrical specifications printed.
- Sept. 30, 1912—Bids opened for electrical work.
- Oct. 9, 1912—Contract for electrical work approved by the Board of Education.

SCHOOL NO. 28—BROOKLYN

DATA PRELIMINARY TO BUILDING DESIGN

- Apr. 9, 1906—City Superintendent recommended to Committee on Sites a new site for Public School 28.
- Apr. 19, 1906—Committee on Sites ordered this site to be placed on preferred list.
- Dec. 6, 1906—Committee on Sites referred matter to a sub-committee.
- Feb. 7, 1907—Committee on Sites approved of a site, subject to financial ability.
- May 6, 1908—Committee on Buildings on recommendation of Superintendent of Buildings recommended an addition to present site of Public School 28 for fire precaution.

- Oct. 6, 1908—Committee on Sites disapproved recommendation.
- Mar. 29, 1909—City Superintendent recommended an addition to site.
- June 2, 1909—Committee on Sites referred recommendation to Local School Board.
- June, 1909—Local School Board in its semi-annual report approved recommendation.
- Sept. 15, 1909—Committee on Sites decided to recommend selection of adjoining site, as recommended, to the Board of Education.
- Sept. 15, 1909—Committee on Sites selected as site vacant property 50 feet by 200 feet adjoining present site of Public School 28, on Fulton and Herkimer Streets, west of Howard Avenue, so as to erect new building.
- Sept. 22, 1909—Board of Education selected above plot 50 feet by 200 feet adjoining School 28, assessed value \$9,000.
- Oct. 26, 1911—Board of Estimate and Apportionment authorized purchase at private sale for not more than \$14,500.
- Nov. 22, 1911—Board of Education made requisition of Comptroller for \$14,500 for above site.
- Dec. 8, 1911—Title vested in City.
- Feb. 6, 1911—Board of Education requested of Board of Estimate and Apportionment \$218,540 for new School 28.
- Mar. 29, 1911—City Superintendent reported that in accordance with directions from the Committee on Buildings, he had ordered Public School 28 closed until further directions received. Pupils on part time in neighboring buildings.
- Mar. 29, 1911—Board of Education requested of Board of Estimate and Apportionment \$225,540 for first half of 48-room building, placed adjacent to Public School 28, an old building which should be replaced as early as possible. This will afford relief to four schools having 2,715 pupils on part time.
- July 17, 1911—Board of Estimate and Apportionment authorized \$2,512,740 for acquisition of site and construction of buildings, one item being site and building for Public School 28.
- July 25, 1911—Board of Aldermen approved.
- Sept. 19, 1911—Mayor returned without approval or disapproval.
- June 20, 1912—Board of Estimate and Apportionment approved form of contract, specifications, plans, and estimates for cost of work at Public School 28. \$162,000 for general construction, and \$13,000 for plumbing and drainage.

GENERAL CONSTRUCTION

- Dec. 27, 1911—Board of Education approved of general construction plans.
- Dec. 30, 1911—Preliminary construction plans submitted to Art Commission.
- Jan. 9, 1912—Preliminary construction plans approved by the Art Commission.
- Jan. 22, 1912—Preliminary construction plans approval certified by the Art Commission.
- Jan. 23, 1912—General construction plans submitted to the Highways Department.
- Jan. 24, 1912—General construction plans approved by Highways Department.
- Dec. 18, 1911 }—Construction plans approved by Building Committee
 Jan. 29, 1912 } of the Board of Education.
- Feb. 5, 1912—Board of Education approved of general construction plans.
- Feb. 6, 1912—Final plans submitted to Art Commission.
- Feb. 13, 1912—Plans approved by Art Commission.
- Feb. 28, 1912—Plans of construction certified by Art Commission.
- Mar. 10, 1912—Manuscript of general construction specifications sent to printer.
- May 1, 1912—Final proof of specifications sent to printer.
- May 4, 1912—General construction plans filed with Bureau of Buildings.
- May 7, 1912—General construction plans examined by Bureau of Buildings.
- May 10, 1912—General construction specifications printed.
- May 11, 1912—General construction plans filed with Department of Water Supply, Gas and Electricity.
- May 14, 1912—General construction plans disapproved by Bureau of Buildings.
- May 31, 1912—General construction plans corrected by the Board of Education.
- May 31, 1912—Permit 2681 authorizing construction, issued by Bureau of Buildings.
- June 3, 1912—Board of Education acknowledges receipt of approval of Department of Water Supply, Gas and Electricity.
- June 3 or 4, 1912—General construction plans transmitted to Department of Finance.
- June 5, 1912—General construction plans received by the Assistant Engineer of the Department of Finance.

- June 17, 1912—General construction plans approved by the Department of Finance.
June 20, 1912—General construction plans approved by the Board of Estimate and Apportionment.
June 27, 1912—Board of Education received notice from the Board of Estimate and Apportionment of approval.
June 28, 1912—Board of Education acknowledged receipt of approval of Board of Estimate and Apportionment.
July 1, 1912—Bids opened for general construction.
July 10, 1912*—Contract approved by Board of Education.
July 24, 1912—Contract filed in the Department of Finance.
July 29, 1912—Actual date of contract.

PLUMBING AND DRAINAGE

- May 4, 1912—Plumbing and drainage plans filed with Bureau of Buildings.
May 13, 1912—Plumbing and drainage plans examined by the Bureau of Buildings.
May 14, 1912—Board of Education notified by Bureau of Buildings plans were ready for correction.
May 22, 1912—Plumbing and drainage plans partly corrected by Board of Education.
May 31, 1912—Plumbing and drainage plans fully corrected by Board of Education and permit issued by Bureau of Buildings.
June 3, 1912*—Board of Education acknowledged transmission of plans to Department of Finance.
June 28, 1912*—Board of Education acknowledges receipt of plans from Finance Department.
July 1, 1912*—Board of Education acknowledges transmission again to Department of Finance.
July 26, 1912*—Board of Education acknowledges receipt of plans from Finance Department.

ELECTRICAL WORK

- Oct. 7, 1912—Manuscript of electrical specifications sent to printer.

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August 3, 1912

FOR

NEW SCHOOL BUILDINGS & THEIR EQUIPMENT

chart 5

		ART COMMISSION				EDUCATION		FIRE DEPT.		BUILDING DEPT.		HIGHWAYS DEPT.		DEPT. W. & C.		FINANCE DEPT.		SPECIFICATIONS		CONTRACT	
		PRELIMINARY FILED	APPRO'D	FINAL FILED	APPRO'D	BLOS. COM. APPRO'D	BO. ED. APPRO'D	FILED	APPRO'D	FILED	APPRO'D	FILED	APPRO'D	FILED	APPRO'D	FILED	APPRO'D	AS SENT CONVENTION PRINTED	AS SENT CONVENTION PRINTED	OPENED	BO. ED. APPRO'D
BOYS H.S.	MARCY & PUTNAM AVE. B'K CONST			Apr 26, '09	Dec 6, '09	Jan 18, '10	Dec 13, '09	Dec 22, '09	*	Dec 12, '09	Jan 10, '10	*		*		*		Dec 8, '09	Dec 22, '09	Dec 31, '09	June 27, '10
	H.T.G. & VENT'G																	June 27, '10	June 27, '10	June 27, '10	June 27, '10
	ELECTRIC																	June 27, '10	June 27, '10	June 27, '10	June 27, '10
	FURN																	June 27, '10	June 27, '10	June 27, '10	June 27, '10
W.I.H.S.	15 & 16 STS. & IRVING PL. MAN CONST	May 9, '10	May 9, '10	June 30, '10	July 5, '10	June 20, '10	June 22, '10	*		Aug 6, '10	Sept 19, '10	*		*		*		Aug 18, '10	Sept 6, '10	Sept 13, '10	Oct 1, '10
	H.T.G. & VENT'G																	Aug 18, '10	Sept 6, '10	Sept 13, '10	Oct 1, '10
	ELECTRIC																	Aug 18, '10	Sept 6, '10	Sept 13, '10	Oct 1, '10
	FURN																	Aug 18, '10	Sept 6, '10	Sept 13, '10	Oct 1, '10
168	THROOP A. BARTLETT & WIPPLE ST. B'K CONST	Aug 4, '10	Sept 13, '10	Sept 2, '10	Oct 11, '10	Sept 26, '10	Sept 29, '10	*		Nov 1, '10	Nov 19, '10	*		*		*		Sept 19, '10	Oct 3, '10	Oct 12, '10	Nov 19, '10
	H.T.G. & VENT'G																	Sept 19, '10	Oct 3, '10	Oct 12, '10	Nov 19, '10
	ELECTRIC																	Sept 19, '10	Oct 3, '10	Oct 12, '10	Nov 19, '10
	FURN																	Sept 19, '10	Oct 3, '10	Oct 12, '10	Nov 19, '10
171	ROSEWOOD A. LINCOLN & NICHOLS A. B'K CONST	Sept 7, '10	Sept 13, '10	Oct 10, '10	Oct 11, '10	Oct 31, '10	Nov 9, '10	*		Nov 15, '10	Dec 10, '10	*		*		*		Oct 25, '10	Nov 4, '10	Nov 11, '10	Nov 28, '10
	H.T.G. & VENT'G																	Oct 25, '10	Nov 4, '10	Nov 11, '10	Nov 28, '10
	ELECTRIC																	Oct 25, '10	Nov 4, '10	Nov 11, '10	Nov 28, '10
	FURN																	Oct 25, '10	Nov 4, '10	Nov 11, '10	Nov 28, '10
47	PANDOLPH ST. LAWRENCE & HAMMOND A. B'K CONST	Nov 14, '10	Nov 15, '10	Jan 6, '11	Jan 10, '11	Jan 9, '11	Jan 11, '11	*		Dec 30, '10	Jan 29, '11	*						Nov 21, '10	Dec 7, '10	Dec 14, '10	Jan 2, '11
	H.T.G. & VENT'G																	Nov 21, '10	Dec 7, '10	Dec 14, '10	Jan 2, '11
	ELECTRIC																	Nov 21, '10	Dec 7, '10	Dec 14, '10	Jan 2, '11
	FURN																	Nov 21, '10	Dec 7, '10	Dec 14, '10	Jan 2, '11
40	PACIFIC & UNION HILL STS. JAMAICA Q. CONST	Nov 11, '10	Nov 13, '10	Jan 5, '11	Jan 10, '11	Jan 30, '11	Feb 6, '11	*		Mar 2, '11	Mar 13, '11	*						Feb 28, '11	Mar 23, '11	Mar 30, '11	Apr 13, '11
	H.T.G. & VENT'G																	Feb 28, '11	Mar 23, '11	Mar 30, '11	Apr 13, '11
	ELECTRIC																	Feb 28, '11	Mar 23, '11	Mar 30, '11	Apr 13, '11
	FURN																	Feb 28, '11	Mar 23, '11	Mar 30, '11	Apr 13, '11

NOTE: * INDICATES APPROVAL NOT REQUIRED AT THAT TIME, OR AS IN THE DEPT. OF HIGHWAYS, THAT NO PERMIT WAS NECESSARY.

Note 1 = Revision 4-10 See Note 1

Chas. S. Roberts, Chas. W. Armstrong & Son

Feb 1, 1912

Note 2 = AS TO FINANCIAL ROLLYTY

		ART COMMISSION				EDUCATION		FIRE DEPT	BUILDING DEPT		HIGHWAYS DEPT		DEPT W & G & EL		FINANCE DEPT		SPECIFICATIONS				CONTRACT		
		PRELIMINARY		FINAL		BLOGG	BO. ED.	FILED	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	M 53 SENT	COPY SENT	PRINTED	BIDS OPENED	APP'D BO. OF ED.	APP'D FINANCE DEPT
		FILED	APP'D	FILED	APP'D	APP'D	APP'D	FILED APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D							
61	12 TH STE OF AV. B. MAN CONST	Nov 12, '10	Nov 15, '10	Jan 6, '11	Jan 10, '11	Mar 27, '11	Mar 29, '11	*	Mar 29, '11	May 1, '11	Apr 3, '11	May 17, '11	Apr 7, '11	Apr 19, '11	Apr 22, '11	May 31, '11	Mar 13, '11	Mar 31, '11	Apr 6, '11	June 19, '11	June 28, '11	Aug 4, '11	
	H'T'G & VENT'G																Jan 9, '12	Feb 5, '12	Dec 19, '11	Jan 3, '12	Jan 9, '12	Feb 13, '12	
	ELECTRIC																Apr 19, '12	June 5, '12	June 19, '12	June 19, '12	July 15, '12	Feb 14, '12	
	FURN																					Mar 12, '12	
BUSINESS H.S.	IRVING AV. BET MADISON & WOODBINE ST. B'X CONST	Sep 27, '10	Sep 13, '10	Feb 11, '11	Feb 12, '11	Apr 10, '11	Apr 12, '11	*	May 23, '11	June 27, '11			Apr 21, '11	May 1, '11	May 5, '11	June 1, '11	Mar 22, '11	Apr 12, '11	Apr 20, '11	June 20, '11	June 29, '11	Aug 9, '11	
	H'T'G & VENT'G												May 18, '11	May 18, '11	May 18, '11	May 18, '11	May 1, '12	Aug 19, '12					
	ELECTRIC												Apr 10, '12	Apr 12, '12	Apr 12, '12		June 13, '12	Aug 19, '12					
	FURN												July 26, '12	Apr 17, '12			June 13, '12						
132A ⁹	182 ND ST & WADSWORTH AV. MAN CONST				Dec 28, '09	Dec 13, '09	Dec '09	*	Permitted	May 5, '11	May 20, '11	June 15, '11	June 15, '11	June 21, '11	June 21, '11	June 21, '11	June 21, '11	June 21, '11	June 21, '11	June 21, '11	June 21, '11	Aug 5, '11	
	H'T'G & VENT'G												Mar 26, '12	Apr 6, '12	Mar 27, '12	Apr 25, '12	Mar 11, '12	Mar 16, '12	Mar 21, '12	May 13, '12	May 22, '12	July 2, '12	
	ELECTRIC												Feb 18, '12	Mar 5, '12	Apr 2, '12	Apr 27, '12	Jan 22, '12	Mar 6, '12	Mar 11, '12	May 6, '12	May 6, '12	July 22, '12	
	FURN												June 13, '12	July 26, '12	May 21, '12	June 5, '12	June 10, '12	June 13, '12					
20A ⁹	FOX SIMPSON & 163 RD ST. B'X CONST.	Apr 5, '11	May 3, '11	May 6, '11	May 11, '11	June 12, '11	June 14, '11	*	June 30, '11	July 25, '11			June 16, '11	July 11, '11	July 11, '11	July 11, '11	July 11, '11	July 11, '11	July 11, '11	Aug 19, '11	Sep 13, '11	Sep 25, '11	
	H'T'G & VENT'G												May 28, '12	June 21, '12	May 15, '12	May 23, '12	May 28, '12	May 28, '12	May 28, '12	May 28, '12	May 28, '12	May 28, '12	
	ELECTRIC												May 29, '12	July 5, '12	June 19, '12	July 26, '12	Mar 21, '12	Mar 12, '12	May 20, '12	July 1, '12	July 10, '12	Aug 16, '12	
	FURN												Apr 12, '12	May 11, '12	July 20, '12		July 10, '12	July 17, '12	July 23, '12				
78A ⁹	119 TH ST & PLEASANT AV. MAN CONST			May 5, '09	Nov 22, '09	Nov 8, '09			Permitted	May 5, '11	July 14, '11	July 24, '11	July 13, '11	July 19, '11	July 26, '11	Aug 12, '11	May 26, '11	July 1, '11	July 10, '11	Sep 5, '11	Sep 13, '11	Sep 25, '11	
	H'T'G & VENT'G												Jan 26, '12	Feb 19, '12	Jan 15, '12	Jan 23, '12	Jan 9, '12	Mar 13, '12	Apr 1, '12	Apr 1, '12	Apr 1, '12	Apr 1, '12	
	ELECTRIC												Apr 27, '12	Apr 3, '12	Apr 25, '12	June 8, '12	Feb 28, '12	Apr 4, '12	Apr 10, '12	June 10, '12	June 13, '12	July 17, '12	
	FURN												July 1, '12	July 26, '12	June 14, '12	June 20, '12	July 3, '12	July 22, '12	July 20, '12				
45	189 TH ST HOFFMAN ST & LORILLARD B'X CONST			June 30, '10	July 5, '10	June 5, '11	June 14, '11		Permitted	May 18, '11			July 21, '11	Aug 8, '11	Aug 9, '11	Aug 29, '11	May 27, '11	July 13, '11	July 20, '11	Sep 11, '11	Sep 13, '11	Oct 9, '11	
	H'T'G & VENT'G												Mar 26, '12	Dec 21, '11	Jan 26, '12	Dec 1, '11	Dec 19, '11	Dec 21, '11	Feb 5, '12	Feb 5, '12	Mar 12, '12		
	ELECTRIC												May 14, '12	June 13, '12	June 14, '12	July 26, '12	May 3, '12	June 14, '12	June 19, '12	July 22, '12	July 29, '12		
	FURN																						
NORMAL COLLEGE	67 TH & 68 TH ST & LEXINGTON AV. MAN CONST	Aug 4, '10	Sep 13, '10	Apr 7, '11	May 11, '11	June 23, '11	June 26, '11		June 29, '11	Aug 16, '11	July 26, '11	Not Required	Aug 22, '11	Aug 28, '11	Aug 28, '11	Sep 14, '11	July 5, '11	Aug 14, '11	Aug 19, '11	Sep 19, '11	Sep 20, '11	Sep 20, '11	
	H'T'G & VENT'G												July 17, '12	July 29, '12	Aug 2, '12		July 6, '12	Aug 2, '12	Aug 9, '12	Sep 4, '12	and Gamm	and For	
	ELECTRIC												June 5, '12				May 22, '12	Aug 5, '12	Aug 12, '12	Sep 4, '12			
	FURN																						

NOTE: * INDICATES APPROVAL NOT REQUIRED AT THAT TIME, OR AS IN THE DEPT OF HIGHWAYS, THAT NO PERMIT WAS NECESSARY. C on S J Report 248, Chas G Armstrong & Son. Feb 1, 1913



		ART COMMISSION				EDUCATION		FIRE DEPT	BUILDING DEPT		HIGHWAYS DEPT		DEPT WSG & EL		FINANCE DEPT		SPECIFICATIONS			CONTRACT			
		PRELIMINARY		FINAL		BLOG COM. BO. ED												MISS	SENT	PRINTED	BIDS OPENED	APPRO'D	AWARDED
		FILED	APPR'D	FILED	APPR'D	APPR'D	APPR'D	FILED	APPR'D	FILED	APPR'D	FILED	APPR'D	FILED	APPR'D	FILED	APPR'D						
92	HAYES AV & 42 ND ST NORTH CORONA Q CONST	Mar 11, '11	Apr 11, '11	May 2, '11	May 11, '11	June 19, '11	June 29, '11			July 10, '11	Aug 2, '11			Aug 3, '11	Aug 21, '11	Sep 7, '11	Sep 20, '11	Aug 5, '11	July 21, '11	Aug 3, '11	Oct 2, '11	Oct 11, '11	Oct 26, '11
	PLUMB & DRG'S																						
	H'T'G & VENT'G																						
	ELECTRIC																						
43A ⁰	FURN													Jan 26, '12	Mar 2, '12	Mar 23, '12	June 8, '12	Jan 19, '12	Mar 4, '12	Mar 7, '12	May 27, '12	June 12, '12	July 13, '12
	BROWN PL 135 TH & 136 TH ST B'X CONST.	Apr 7, '11	Apr 11, '11	May 6, '11	May 11, '11	June 5, '11	June 12, '11			June 30, '11	July 25, '11			Sep 2, '11	Sep 12, '11	Sep 12, '11	Oct 5, '11	July 17, '11	Aug 25, '11	Aug 30, '11	Oct 16, '11	Oct 25, '11	Nov 22, '11
	H'T'G & VENT'G																						
	ELECTRIC																						
39A ⁰	FURN													June 3, '12	June 21, '12	June 22, '12	July 26, '12	May 27, '12	June 23, '12	June 23, '12	July 15, '12	July 29, '12	
	LONGWOOD AVE KELLY & BECK ST B'X CONST	May 10, '11	May 11, '11	July 22, '11	Aug 8, '11	Oct 23, '11	Oct 25, '11			Nov 29, '11	Feb 6, '12	Dec 7, '11		Dec 13, '11	Jan 2, '12	Jan 2, '12	Jan 29, '12	Dec 2, '11	Dec 12, '11	Dec 19, '11	Feb 13, '12	Feb 28, '12	Mar 12, '12
	H'T'G & VENT'G																						
	ELECTRIC																						
173	FURN																						
	PENNSYLVANIA AVE BET LIBERTY & GLENMORE AVE B'X CONST	July 10, '11	July 11, '11	Aug 3, '11	Aug 8, '11	Oct 9, '11	Oct 11, '11			Nov 10, '11	Dec 4, '11			Nov 9, '11	Nov 29, '11	Nov 29, '11	Jan 9, '12	Sep 27, '11	Oct 31, '11	Nov 8, '11	Feb 19, '12	Feb 28, '12	Apr 1, '12
	PLUMB & DRG'S																						
	H'T'G & VENT'G																						
174	ELECTRIC																						
	FURN																						
	DUMONT ALABAMA & WILLIAMS AVE B'X CONST	Oct 29, '11	Nov 12, '11	Dec 1, '11	Dec 12, '11	Dec 11, '11	Dec 13, '11			Dec 30, '11	Jan 22, '12			Dec 15, '11	Jan 2, '12	Jan 4, '12	Jan 19, '12	Nov 9, '11	Dec 9, '11	Dec 12, '11	Feb 5, '12	Feb 5, '12	Mar 19, '12
	PLUMB & DRG'S																						
72A ⁰	H'T'G & VENT'G																						
	ELECTRIC																						
28	104 TH ST & LEXINGTON AVE MAN CONS	Not Required		Dec 6, '11	Dec 12, '11	Dec 11, '11	Dec 13, '11			Jan 27, '12	Feb 23, '12	Dec 7, '11	Dec 11, '11	Jan 11, '12	Jan 17, '12	Jan 26, '12	Feb 15, '12	Dec 19, '11	Jan 6, '12	Jan 11, '12	Mar 9, '12	Mar 13, '12	Apr 10, '12
	H'T'G & VENT'G																						
	ELECTRIC																						
28	HERKIMER ST N RALPH AV B'X CONS.	Dec 29, '11	Jan 9, '12	Feb 5, '12	Feb 13, '12	Jan 23, '12	Feb 5, '12			May 3, '12	May 31, '12	Jun 23, '12	Jan 24, '12	May 10, '12	June 3, '12	June 3, '12	June 27, '12	Mar 9, '12	May 1, '12	May 10, '12	July 1, '12	July 10, '12	
	PLUMB & DRG'S																						
	H'T'G & VENT'G																						
	ELECTRIC																						
28	FURN																						

SHEET No. 1 DATA AS TO CERTAIN STEPS IN THE PREPARATION OF PLANS & SPECIFICATIONS

October 9, 1912.

FOR

NEW SCHOOL BUILDINGS & THEIR EQUIPMENT

Duplicate of Charts Dated Aug. 3, 1912 Showing Changes Made by the Board of Education.

chart 8

		ART COMMISSION		EDUCATION		FIRE DEPT.		BUILDINGS DEPT.		HIGHWAYS DEPT.		DEPT W & CL		FINANCE DEPT.		SPECIFICATIONS		CONTRACT	
		PRELIMINARY FILED APP'D	FINAL FILED APP'D	BLDG COM FILED APP'D	BO. ED. FILED APP'D	FILED APP'D	FILED APP'D	FILED APP'D	FILED APP'D	FILED APP'D	FILED APP'D	FILED APP'D	FILED APP'D	FILED APP'D	FILED APP'D	N 55 COPY SENT FOR FINAL PRINTED	BIDS OPENED	APP'D BIDDED	APP'D AWARDED
BOYS H S	MARCY & PUTNAM AVE B'K CONST.					*				*		*							
	H.T.G. & VENT'G.													Jan 11, '12	Feb 19, '12				
	ELECTRIC													Oct 9, '11	Dec 6, '11				
	FURN.																		Jan 10, '12
W. I. H S	15 & 16 STS & IRVING PL. MAN CONST.					*				*		*							
	H.T.G. & VENT'G.													Dec 26, '11	Mar 21, '12				
	ELECTRIC													Sep 5, '11	Oct 7, '11				
	FURN.											June 17, '11	June 29, '11						July 31, '11
168	THROOP A. BARTLETT & WIFE LESTER B'K CONST.					*				*		*			Dec 9, '10				
	H.T.G. & VENT'G.																		
	ELECTRIC																		Jan 15, '12
	FURN.																		
171	RIDGEWOOD A. LINCOLN & NICHOLS A. B'K CONST.					*				*		*							
	H.T.G. & VENT'G.														June 2, '11				
	ELECTRIC													May 15, '11					
	FURN.																		
47	PANDOLPH ST. LAWRENCE & HAMMOND A. B'K CONST.					*				*					Feb 6, '11				
	H.T.G. & VENT'G.														Mar 25, '12	Apr 21, '12			
	ELECTRIC																		
	FURN.																		
40	PACIFIC & UNION HULL ST'S JAMAICA Q. CONST.					*				*					Feb 6, '11	Apr 21, '11			
	H.T.G. & VENT'G.														Dec 18, '11	Jan 19, '12			
	ELECTRIC													Oct 9, '11	Nov 1, '11				
	FURN.															Jan 2, '12	Mar 21, '12		

NOTE: * INDICATES APPROVAL NOT REQUIRED AT THAT TIME, OR AS IN THE DEPT OF HIGHWAYS THAT NO PERMIT WAS NECESSARY.

Oct 3, 11 Report # 2, Chas G. Armstrong 9500

Under Scored Dates Indicate Additions And Not Changes.



SHEET No 2. October 9, 1912.

charl 9

		ART COMMISSION		EDUCATION		FIRE DEPT	BUILDINGS DEPT	HIGHWAYS DEPT	DEPT W SG & EL	FINANCE DEPT	SPECIFICATIONS			CONTRACT						
		PRELIMINARY FILED	FINAL APP'D	Bldg COM APP'D	BO ED APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	M ST COM SENT	SENT ORIGINAL	PRINTED	BIDS OPENED	APP'D BO OFD	APP'D MANAGER	
61	12 TH ST. E OF AV B. MAN CONST.					*														
	H'T'G. & VENT'G																			
	ELECTRIC FURN												July 15, '12	Aug 1, '12			Aug 1, '12	Aug 7, '12	Sep 2, '12	Sep 4, '12
BUSHWICK H 5	IRVING AV. BET MADISON & WOODBINE ST BX CONST.					*							May 6, '11	June 9, '11						
	H'T'G. & VENT'G												Sep 5, '12	Sep 20, '12			Aug 29, '12	Aug 29, '12	Sept 12, '12	Sept 12, '12
	ELECTRIC FURN																Aug 29, '12	Sept 16, '12		
132A ⁹	182 ND ST. & WADSWORTH AV MAN CONST.				Dec. 22, '09	*														
	H'T'G. & VENT'G												July 21, '11				June 9, '11			
	ELECTRIC FURN												May 1, '12							
20A ⁹	FOX SIMPSON & 163 RD ST BX CONST.					*														
	H'T'G. & VENT'G																			
	ELECTRIC FURN												Aug 19, '11				June 7, '11	June 12, '11		
78A ⁹	119 TH ST & PLEASANT AV MAN CONST.				Nov 10, '09															
	H'T'G. & VENT'G																			
	ELECTRIC FURN											Mar 6, '12				June 23, '12	Aug 3, '12			
45	189 TH ST. HOFFMAN ST. & LORILLARD PL BX CONST.																			
	H'T'G. & VENT'G																			
	ELECTRIC FURN												Aug 9, '11	Sept 1, '11	Oct 7, '11		July 19, '11			
NORMAL COLLEGE	67 TH & 68 TH ST. & LEXINGTON AV MAN CONST.																			
	H'T'G. & VENT'G																			
	ELECTRIC FURN												Aug 3, '12	Aug 5, '12	Aug 15, '12	Sept 6, '11	Nov 6, '11	Sept 23, '11	July 6, '11	

NOTE: * INDICATES APPROVAL NOT REQUIRED AT THAT TIME, OR AS IN THE DEPT OF HIGHWAYS, THAT NO PERMIT WAS NECESSARY

Cons 1 Report No. 1400 G Armstrong 19 Sep Feb 1, 1912

Under Scored Dates Indicate Additions And Not Changes.



		ART COMMISSION				EDUCATION		FIRE DEPT		BUILDING DEPT		HIGHWAYS DEPT		DEPT'WS & EL		FINANCE DEPT		SPECIFICATIONS			CONTRACT		
		PRELIMINARY		FINAL		BLOG.COM	BO. ED	FILED	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	MISS	SENT	COMPTENT FOR FINAL PRINTED	BIDS	APP'D	APP'D
		FILED	APP'D	FILED	APP'D	APP'D	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D	FILED	APP'D				OPENED	APPROVED	APPROVED
92	HAYES AV & 42 ND ST NORTH CORONA Q CONST																	Sept 23, 11					
	PLUMB & DRG'S																	Nov 14, 11					
	H'TG & VENT'G																	June 3, 12	June 29, 12				
	ELECTRIC															Mar 5, 12							
43A9	FURN																						
	BROWN PL 135 TH & 136 TH ST B'X CONST.																	Oct 17, 11					
	H'TG & VENT'G.																						
	ELECTRIC																						
39A9	FURN																	Aug 9, 12					Aug 26, 12
	LONGWOOD AVE KELLY & BECK ST B'X CONST.																	Jan 3, 12	Feb 5, 12				
	H'TG & VENT'G.																	Sept 19, 12	Oct 4, 12				
	ELECTRIC																	Sept 19, 12					
173	FURN																	Aug 29, 12					
	PENNSYLVANIA AV BET LIBERTY & GLENMORE AV B'X CONST.																	Jan 19, 12	Sept 28, 11	Nov 1, 11			
	PLUMB & DRG'S																	Aug 22, 12	Sept 5, 12	Nov 28, 11	Jan 19, 12		
	H'TG & VENT'G																	Aug 28, 12	Aug 31, 12	Sept 5, 12	Sept 19, 12		
174	ELECTRIC																	Aug 27, 12	Aug 27, 12	Sept 19, 12			
	FURN																	Aug 27, 12	Aug 27, 12	Sept 19, 12			
	DUMONT ALABAMA & WILLIAMS AVE B'X CONST.																	Jan 26, 12					
	PLUMB & DRG'S																	Aug 8, 12	Aug 12, 12	Jan 4, 12	Jan 26, 12		
72A9	H'TG & VENT'G																	Aug 8, 12	Aug 15, 12	Aug 3, 12	Sept 19, 12		
	ELECTRIC																	Aug 26, 12	Aug 27, 12	Sept 19, 12			
	104 TH ST & LEXINGTON AVE MAN CONS.																						
	H'TG & VENT'G																	Feb 26, 12					
28	ELECTRIC																	Aug 10, 12	Sept 19, 12				
																		Sept 10, 12	Sept 11, 12				
	HERKIMER ST NR RALPH AV B'X CONS																						
	PLUMB & DRG'S																	June 29, 12	Mar 10, 12				
28	H'TG & VENT'G																	July 1, 12	Nov 28, 11				
	ELECTRIC																	June 3, 12	June 29, 12				
	FURN																						
																		Dec 7, 12					



EXHIBIT "A"

SAMPLE COPY OF LETTER SENT BY CHAS. G. ARMSTRONG & SON TO THE
VARIOUS CITY DEPARTMENTS

October 7, 1912.

DEAR SIR:—The School Inquiry Committee of the Board of Estimate has directed me to make an investigation of the delays in the construction of school buildings. In the course of this investigation I received from the Board of Education figures which indicate that the plans and specifications of various public schools were held in your department for certain periods of time. I enclose a list of items which concern your department showing the time consumed.

In order that these dates may be confirmed will you kindly see if they are correct, and indicate any and all errors. Kindly let me know what actions your department took between the time the matter was actually referred to your department and the time the matter left your department. Did you find it necessary to advise the School Board in any way as to plans or specifications? Did you suggest any changes or alterations? If you made such suggestions, did you effect any saving in cost of operation or increased efficiency, and what was the nature of the suggestions?

Any correspondence or memoranda which will enable me to determine where and why various delays have occurred will greatly facilitate my work. It is not the purpose of this investigation to assail any department, but to find and prevent avoidable delays in the construction of school buildings.

Have you any constructive suggestions to make for cutting down delays in approving and advertising plans for school buildings?

I ask you to give this matter your early attention. If you wish to designate a representative of your department to go over the matter with me I shall be glad to call upon you or him at your convenience.

Yours very truly,

CHAS. G. ARMSTRONG & SON.

(Signed) Chas. G. Armstrong.

EXHIBIT "B"—PART 1

CITY OF NEW YORK

DEPARTMENT OF FINANCE

In replying refer to Investigation and Statistics.

November 25, 1912.

Mr. Charles G. Armstrong,

Charles G. Armstrong & Son,

149 Broadway, New York City.

SIR:—In reference to your two communications dated October 7th, 1912, requesting information as to the action of the Department of Finance on certain plans and specifications relative to the construction of school buildings, I transmit herewith a copy of a report made to me on the matter of the Bureau of Municipal Investigation and Statistics of this Department. There are also transmitted copies of two detailed exhibits supporting the report.

I have designated Mr. William Bullock of the Bureau of Municipal Investigation and Statistics to take up the matter with you in regard to further details, if you so desire.

Respectfully,

(Signed) DOUGLAS MATHEWSON,

Deputy and Acting Comptroller.

(Enclosures.)

EXHIBIT "B"—PART 2

November 15, 1912.

AMcC

Hon. William Prendergast,

Comptroller.

SIR:—In connection with a communication, dated October 7, 1912, from Charles G. Armstrong relative to an investigation being made by him for the School Inquiry Committee as to the delays in the construction of school buildings, I report as follows:

Mr. Armstrong states that he received from the Board of Education figures which indicate that the plans and specifications of various public schools were held in the Department of Finance for certain periods of

time. Transmitted with the communication was a list of items concerning this Department, and purporting to show the time consumed. Regarding this list Mr. Armstrong makes six inquiries or suggestions, as follows:

- 1—See if the dates are correct and indicate any and all errors.
- 2—Kindly let me see what action your Department took between the time the matter was actually referred to your Department and the time the matter left your Department.
- 3—Did you find it necessary to advise the School Board in any way as to plans and specifications?
- 4—Did you suggest any changes or alterations?
- 5—If you made such suggestions, did you effect any saving in cost of operation or increased efficiency, and what was the nature of the suggestions?
- 6—Have you any constructive suggestions to make for cutting down delays in approving and advertising plans for school buildings?

Each of these inquiries or suggestions is covered separately and in detail as follows:

Q—See if dates are correct and indicate any and all errors?

A—The Assistant Engineer who reported on practically all the matters listed by Mr. Armstrong has checked up the dates given for the filing of the plans and specifications and the approval of the same. Out of a total of 115 only 26 are correct. The others are from one to eighteen days in error. Attached hereto is a tabulated statement (Exhibit 1) giving the correct dates on each item. The table sets forth the date of transmission by the Board of Education, the date the matter was received by the Assistant Engineer of the Department of Finance, the date of his report, the date of approval of the Board of Estimate and Apportionment, the time required for report, and the total time from date of transmission to the date of approval. The table by comparison indicates the errors in Mr. Armstrong's list.

Q—Kindly let me see what action your Department took between the time the matter was actually referred to your Department and the time the matter left your Department?

A—The same plan of action was followed in each instance. The form of contract, specifications, and plans were examined in detail for errors and need of amendments. The estimates of cost were computed as to their reasonableness and with a view of possible decreases.

Q—Did you find it necessary to advise the School Board in any way as to the plans and specifications?

A—The Assistant Engineer who examined practically all of these matters states that it was necessary to advise the Department of Education in the case of almost every contract.

Q—Did you suggest any changes or alterations?

A—Fifty-five contracts are listed by Mr. Armstrong. Seventeen of these were actually amended by the Assistant Engineer, and the amendments approved by the Board of Estimate and Apportionment. These amendments served as a guide to the Department of Education, and have been incorporated in subsequent contracts.

Q—If you made such suggestions did you effect any saving in cost of operation or increased efficiency, and what was the nature of the suggestions?

A—The question of actual saving in cost is problematical for the reason that the figures dealt with are estimates. Attached hereto is a statement (Exhibit 2) which shows increased efficiency as a result of the work in the Department of Finance. This statement sets forth the nature of the suggestions made to the Department of Education, incorporated in reports made to the Board of Estimate and Apportionment, and approved by that Board.

Q—Have you any constructive suggestions to make for cutting down delays in approving and advertising plans for school buildings?

A—To the extent of the work done by the Department of Finance on the form of contracts, specifications, and plans for the Department of Education there is no unnecessary delay in the preparation of reports on same for the Board of Estimate and Apportionment.

Respectfully,

(Signed) WILLIAM BULLOCK,

Acting Supervising Statistician and Examiner.

EXHIBIT "B"—PART 3

"Suggestions" made to Department of Education on forms of contract specifications and plans relative to school buildings and approved, as amendments, by the Board of Estimate and Apportionment.

BOYS' HIGH SCHOOL—BROOKLYN

The time for the completion of the heating and ventilating work in the new part of the building was extended from 60 to 100 days.

A copy of a letter of the Chief Engineer of Light and Power, Department of Water Supply, Gas and Electricity, taking the electrical equipment out of the requirements of theater wiring, was attached to the plans.

The specifications for furniture were amended to permit of free competitive bidding.

The form of contract for furniture, etc., was amended.

WASHINGTON IRVING HIGH SCHOOL—MANHATTAN

The approval of the Department of Water Supply, Gas and Electricity to the specifications and plans for electrical equipment was obtained before report to the Board of Estimate and Apportionment.

Four amendments to the specifications for furniture were made, and an additional drawing was attached to the plans to make clearer what was to be furnished.

The form of contract was amended by inserting the amounts of liquidated damages for each of eleven items.

PUBLIC SCHOOL 171—BROOKLYN

The form of contract and specifications for furniture were amended.

PUBLIC SCHOOL 40—THE BRONX

The estimated cost of the Department of Education for electric equipment was \$3,800 to be charged entirely to corporate stock. The Department of Finance properly charged \$3,300 to corporate stock and \$500 to repair account, and the amendment was so approved by the Board of Estimate and Apportionment.

PUBLIC SCHOOL 47—THE BRONX

The plans and specifications were amended by adding a planting schedule, a passageway in the yard and a water meter, all of which were omitted from the plans submitted by the Board of Education.

The approval of the Department of Water Supply, Gas and Electricity was obtained to the sanitary plans and specifications on account of an electric motor included therein.

The form of contract for heating and ventilating work was amended by adding the amount of liquidated damages for each of two items.

PUBLIC SCHOOL 40—QUEENS

The plans and specifications for general construction were amended by the addition of a water meter, and the approval of the Department of Water Supply, Gas and Electricity was obtained.

The form of contract for electric equipment was amended by inserting the amount of liquidated damages.

The form of contract for furniture was amended by inserting the amount of liquidated damages for the several items.

PUBLIC SCHOOL 61—MANHATTAN

The specifications and plans for general construction were amended so as to show the construction of floor arches, hollow brick and terra cotta lining to outside walls, and the erection of additional fence wall on easterly side of the property. A correction was also made in the numbering of the piles.

BUSHWICK HIGH SCHOOL—BROOKLYN

The specifications for general construction were amended so as to indicate the construction of floor arches, and to permit of free competitive bidding.

The plans were amended by the addition of a line of gas piping which had been omitted by the Department of Education.

PUBLIC SCHOOL 132—MANHATTAN

The estimated costs of the Board of Education for Items 1 and 2, heating and ventilating work, were respectively \$26,000 and \$3,600, to be charged entirely to corporate stock. Of these amounts \$2,000 and \$600 respectively, were properly charged to repair accounts.

The estimated cost of the Board of Education for electric equipment was \$7,900, to be charged entirely to corporate stock. Of this amount \$900 was charged to a repair account.

PUBLIC SCHOOL 45—THE BRONX

The form of contract for general construction was amended so as to state correctly the time for the completion of the work.

PUBLIC SCHOOL 92—QUEENS

The specifications for general construction, Items 1 and 2, were amended so as to state definitely which contractor should pay for water used on the work; references to painting and gymnasium were omitted, there being none; a correction was made as to method of construction of assembly room doors and typographical errors were corrected.

PUBLIC SCHOOL 173—BROOKLYN

The form of contract for general construction was amended so as to specify the amount of liquidated damages.

The specifications were also amended. The plans were amended by the insertion of a new sheet of drawings so as to show stone water table around rear of building.

EXHIBIT "B"—PART 4

DEPARTMENT OF FINANCE,

CITY OF NEW YORK

May 4th, 1911.

MR. EGERTON L. WINTHROP,

President, Board of Education.

DEAR SIR:—Plans and specifications for General Construction, etc., of new Public School 61, Borough of Manhattan, transmitted by the Secretary of your board in a communication dated April 24, 1911, for approval of the Board of Estimate and Apportionment are herewith returned for the following reasons:

Under floor systems, partitions, etc., on page 19, third paragraph of the specifications it is stated that "the Contractor, subject to the approval of the Bureau of Buildings and of the Superintendent of School Buildings, may use other systems of floor construction as per Section 106 of the Building Code, consisting of segmental arches of concrete composed of Portland cement, clean sharp sand, and clean steam boiler cinders mixed in the proportions of one, two and five as required by Section 18 of said Code; * * *"

Section 18 of the Building Code states that concrete shall be composed of one part cement, two parts sand, and five parts of clean broken stone, of such size so as to pass in any way through a two-inch ring, or good clean gravel may be used in the same proportion as broken stone.

The use of cinder concrete arches is not permitted by the Building Code and should not be specified.

The plans show a building adjacent to the property line on the east. This building has been removed and the plans should be revised so as to show the continuation of the wall and fence along the property line, to the street line.

The specification on page 17, fourth paragraph, reads as follows:

"Hollow Brick.—All outside walls of a greater thickness than 16 inches (except where walls are not to be plastered and where covered by flues or similar work) shall be lined with hollow terra

cotta brick, Haverstraw size, returning same the full depth of all jambs back to facework."

Paragraph five, same page, is as follows:

"*Wall Furring*.—The inside faces of all outside 12 and 16-inch walls, which are specified to be plastered, shall be lined with terracotta furring tiles 2 inches thick, bedded and jointed in cement mortar."

It is not clear whether or not the hollow brick or furring tiles are included in the thickness of the walls as given on the plans.

Plans show two piles with numbers 953 and 954. This should be corrected to avoid the possibility of any claim by the Contractor for additional piles.

The specifications refer to detail drawings of the various parts of the building. Some of these drawings are standard details such as are used on all school buildings, while many are special and refer only to this building. It would seem that the detail drawings should be designated by numbers so as to identify them properly. In the case of a standard detail a simple number will answer, while if the standard detail is altered for a particular job, an identifying letter or number should be added to the original number of the Standard Detail.

Before passing upon these plans and specifications it will be necessary to have a complete set of all the detail drawings referred to in the specifications.

I suggest that you have these plans and specifications corrected as indicated and return them with a complete set of the detail drawings required for the contract.

Respectfully,

(Signed) WILLIAM A. PRENDERGAST,

Comptroller.

SUBJECT: No. 5846—P. S. 61, Manhattan

May 10th, 1911.

HON. EGERTON L. WINTHROP, JR.,

President, Board of Education.

DEAR SIR:—I am this day in receipt through Secretary Palmer of a communication addressed to you under date of May 4, 1911, by Comptroller Prendergast, returning the plans and specifications for new Public School 61, Borough of Manhattan, for the reasons as given therein, to wit:

A.—“Under floor systems, partitions, etc., on page 19, third paragraph of the specifications, it is stated that the Contractor, subject to the approval of the Bureau of Buildings and of the Superintendent of School Buildings, may use other systems of floor construction as per Section 106 of the Building Code, consisting of segmental arches of concrete composed of Portland cement, clean sharp sand and clean steam boiler cinders mixed in the proportions of one, two and five, as required by Section 18 of said Code; * * * ”

Section 18 of the Building Code states that concrete shall be composed of one part cement, two parts sand and five parts of clean broken stone, of such size so as to pass in any way through a two-inch ring, or good clean gravel may be used in the same proportion as broken stone.

“The use of cinder concrete arches is not permitted by the Building Code and should not be specified.”

The specifications referred to follow the language of Section 106 of the Building Code very closely and it is the same as we have used for the last ten years.

The statement that the use of cinder concrete arches is not permitted by the Building Code is an error, same having been accepted in a large proportion of the buildings of this City under the provisions of said section.

The interpretation has always been that the proportions entering into the composition of the concrete as required by Section 18—one, two, and five—were to be followed but that the aggregate, aside from the cement and sand, might be different, as long as it was a fireproof material as required by the Code.

Further: Public exhibition is made in the offices of the Building Bureau, 18th Street and Fourth Avenue, of the various types of cinder concrete arches which are approved and can therefore be used, and is so understood among the architects and building trades.

If we should follow the inference drawn from the statement that cinder concrete arches should not be used and we should use stone concrete, as provided in Section 18, which applies to foundations, we would increase the dead weight of our floors by one hundred per cent, thus demanding increased weight in the steel work, all of which would add to the cost of the building without corresponding benefit.

B.—“The plans show a building adjacent to the property line on the east. This building has been removed and the plans should be revised so as to show the continuation of the wall and fence along the property line, to the street line.”

At the time of the preparation of our plans the westerly and northerly wall of the old dwelling next adjacent to our school property on the east was in a very dilapidated condition held in position by spur shores or supporting timbers.

It was not possible to ascertain what was to be done with the property except that it would be improved in the near future.

Inasmuch as we have a clear passage to the east between our school building and the old dwelling it would be the part of un wisdom not to provide for the construction of a fence until it is distinctly known the nature of the improvement to be made on the adjacent property, which cannot be done at the present time.

In all probability there will be a new building erected directly on the line and, if so, it would be a waste of funds to provide for a fence wall.

All that will be necessary in such a case to complete our premises in the future is the laying of the concrete pavement, which is provided for and any incidental work which may be necessary to unprotected angles and which cannot now be foreseen.

C.—“The specification on page 17, 4th paragraph, reads as follows:

“*Hollow Brick*.—All outside walls of a greater thickness than 16 inches (except where walls are not to be plastered and where covered by flues or similar work) *shall be lined* with hollow terra cotta brick, Haverstraw size, returning same the full depth of all jambs back to facework.’

“Paragraph five, same page, is as follows:

“*Wall Furring*.—The inside faces of all outside 12 and 16-inch walls, which are specified to be plastered, *shall be lined* with terra cotta furring tiles 2 inches thick, bedded and jointed in cement mortar.’”

“It is not clear whether or not the hollow brick or furring tiles are included in the thickness of the walls as given on the plans.”

The wording under paragraph headed “Hollow Brick” might seem to be somewhat indefinite as to whether “hollow brick, Haverstraw size” were to be included in the thickness of the wall or not, were it not for the fact that the plans clearly show that over-all thickness of the walls and further that where the walls are covered with two-inch terra cotta furring tiles there is an additional line shown thereon properly marked in a sufficient number of cases to indicate the purpose thereof; this, aside from the well-known nature of the materials and the manner in which they are to be used.

D—“Plans show two piles with numbers 953 and 954. This should be corrected to avoid the possibility of any claim by the contractor for additional piles.”

It is true there is a duplication of the numbers 953 and 954, but the correct number of piles is shown very clearly.

The exception is probably due to a misapprehension as to the use of the numbers inserted within the circles indicating the piles on the drawings.

As a matter of fact it is a matter which does not concern the contractor in any way, being simply for the guidance of the inspector in the use of his record book, as provided by our rules.

The contractor could not make any claims for extra piles since the number and locations are shown very clearly.

E.—“The specifications refer to detail drawings of the various parts of the building. Some of these drawings are standard details such as are used on all school buildings, while many are special and refer only to this building. It would seem that the detail drawings should be designated by numbers so as to identify them properly. In the case of a standard detail a simple number will answer, while if the standard detail is altered for a particular job an identifying letter or number should be added to the original number of the Standard Detail.”

A complete set of standard and special details for this building are forwarded herewith.

Regarding the suggestion that detail drawings should be numbered so as to identify them properly and making a number of suggestions along the same lines, permit me to say that this is *precisely the method that has been worked out and in use in this office for a great many years* and one of the Comptroller's engineers was so informed when he was making inquiries in reference to the matter.

The drawings which are sent herewith will show for themselves.

Very truly yours,

(Signed) C. B. J. SNYDER,

Supt. of School Buildings.

J. E. D.

New York, May 29, 1911.

MR. C. B. J. SNYDER,

Superintendent of School Buildings.

DEAR SIR:—I have the honor to transmit herewith a certified copy of a resolution adopted by the Board of Estimate and Apportionment on May 25, 1911, approving the plans, specifications and estimate of cost for new Public School 61, Manhattan, provided said plans and speci-

fications are altered in accordance with the suggestions set forth in said resolution.

Respectfully yours,

A. E. PALMER,

Secretary, Board of Education.

T. A. D.

Enclosure.

RESOLVED, That the Board of Estimate and Apportionment, pursuant to its resolution adopted June 3, 1910, hereby approves the plans, specifications and estimate of cost, three hundred and sixteen thousand dollars (\$316,000), for new Public School 61, Borough of Manhattan, provided the plans and specifications are altered as follows:

Paragraph 3, page 19, first six lines to read as follows:

"OTHER SYSTEMS:—The Contractor, subject to the approval of the Bureau of Buildings and of the Superintendent of School Buildings, may use other systems of floor construction as per Section 106 of the Building Code, consisting of segmental arches of Portland cement concrete mixed in the proportions of one, two, and five, as required by Section 18 of said code. * * *"

Paragraph 3, page 60, sixth line, after the word "iron" insert the words or approved equal.

The numbers of piles Nos. 953, 954, 955, 956, 957 on the plans to be changed to 955, 956, 957, 958, and 959.

A true copy of resolution adopted by the Board of Estimate and Apportionment May 25, 1911.

(Signed) JOSEPH HAGG,

Secretary.

Chart 11		DATE OF TRANSMISSION BY BOARD OF EDUCATION	DATE REC'D BY ASS. ENG. OF FINANCE OFF.	DATE OF REPORT	DATE OF APPROVAL BY B'D OF ESTIM. & APPROP.	TIME REQ'D FOR REPORT	TOTAL TIME FROM DATE OF TRANS. TO DATE OF APP.
BOYS' HIGH SCHOOL B'X							
General Construction							
Heating, Ventilating and Temperature Regulation							
Old Building		Jan. 11, '12	Jan. 15, '12	Jan. 28, '12	Feb. 8, '12	7 "	28 "
Heating, Ventilating and Temperature Regulation							
New Building		June 27, '11	June 28, '11	July 1, '11	July 13, '11	3 "	18 "
Electric Equipment		Aug. 31, '11	Sept. 1, '11	Sept. 2, '11	Oct. 5, '11	26 "	35 "
Furniture		Oct. 19, '11	Oct. 21, '11	Nov. 16, '11	Nov. 23, '11	28 "	34 "
Furniture increased - estimate of cost - item		Jan. 3, '12	Feb. 28, '12	Mar. 3, '12	Mar. 14, '12	4 "	71 "
Furniture, etc.		Apr. 29, '12	Apr. 26, '12	May 3, '12	May 23, '12	7 "	29 "
* APPROVED BY COMPTROLLER							
WASHINGTON IRVING HIGH SCHOOL							
General Construction		Oct. 2, '10	Oct. 14, '10	Oct. 25, '10	Oct. 29, '10	11 "	56 "
Electric Equipment		June 29, '11	June 29, '11	July 7, '11	July 13, '11	8 "	15 "
Heating, Ventilating and Temperature Regulation		Aug. 19, '11	Aug. 15, '11	Sept. 11, '11	Sept. 11, '11	27 "	28 "
Electric Elevator, Ash Hoist, etc.		Sept. 18, '11	Sept. 19, '11	Sept. 27, '11	Oct. 5, '11	18 "	27 "
Furniture		Nov. 25, '11	Nov. 23, '11	Dec. 7, '11	Dec. 13, '11	14 "	22 "
* APPROVED BY DEPT. W561E JULY 11, 1911.							
* * APPROVED BY COMPTROLLER							
PUBLIC SCHOOL 168, BROOKLYN							
General Construction		Nov. 2, '10	Nov. 11, '10	Nov. 28, '10	Dec. 7, '10	12 "	35 "
Heating, Ventilating and Temperature Regulation		Apr. 8, '11	Apr. 10, '11	Apr. 13, '11	Apr. 20, '11	7 "	12 "
Electric Equipment		June 30, '11	July 1, '11	July 2, '11	July 13, '11	6 "	13 "
Furniture		Jan. 16, '12	Jan. 18, '12	Mar. 1, '12	Mar. 14, '12	43 "	25 "
* APPROPRIATION APPROV. BOARD OF ALDERMEN FEB. 6, '12							
PUBLIC SCHOOL 171, BROOKLYN							
General Construction		Nov. 16, '10	Nov. 23, '10	Dec. 7, '10	Dec. 15, '10	14 "	29 "
Heating, Ventilating and Temperature Regulation		May 12, '11	May 15, '11	May 22, '11	May 25, '11	13 "	13 "
Electric Equipment		May 29, '11	May 29, '11	June 2, '11	June 18, '11	12 "	13 "
Furniture		Nov. 21, '11	Nov. 23, '11	Mar. 6, '12	Mar. 13, '12	103 "	63 "
* APPROPRIATION APPROV. BY B'D OF ALDERMEN FEB. 6, '12							
* PLANS RECEIVED DEC. 20, 1911.							

Feb. 1912

C. O. S. I. Report #4 Chas. G. Armstrong & Son.

Chart 12	DATE OF TRANSMISSION BY BOARD OF EDUCATION	DATE REC'D BY BOARD OF EDUCATION	DATE OF REPORT	DATE OF APP BY BO OF ESTIM & APPORT	TIME REQUIRED FOR REPORT	TOTAL TIME FROM DATE OF TRANSMISSION TO DATE OF APPROVAL
<u>PUBLIC SCHOOL 40, B'X.</u>	General Construction	Aug 6, '10	Aug 6, '10	Aug 16, '10	5 Days	10 Days
	Furniture	Apr 9, '11	Apr 5, '11	Apr 20, '11	14 "	10 "
	Electric Equipment	Apr 21, '11	Apr 24, '11	May 4, '11	5 "	13 "
	Heating, Ventilating and Temperature Regulation	July 11, '11	July 13, '11	July 27, '11	1 "	16 "
	* APPROVED BY THE COMPTROLLER					
<u>PUBLIC SCHOOL 47, B'X.</u>	General Construction	Feb 7, '11	Feb 8, '11	Feb 17, '11	9 "	"
	General Construction, App'd BY W.S.G. & E.	Mar 23, '11	Mar 23, '11	Mar 30, '11	7 "	8 "
	Heating, Ventilating and Temperature Regulation	Nov 21, '11	Nov 23, '11	Mar 19, '12	100 "	114 "
	Electric Equipment	Jan 22, '12	Jan 29, '12	Mar 12, '12	37 "	52 "
	Furniture	May 2, '12	May 6, '12	May 31, '12	11 "	29 "
* RETURNED FOR APPROVAL OF DAP W.S.G. & E.						
	** APPROVAL APPROVED BY BO. OF ALDERMEN	Feb 6, '12				
	*** APPROVAL APPROVED BY BO. OF ALDERMEN	May 2, '12				
<u>PUBLIC SCHOOL 40, QUEENS</u>	General Construction	Feb 7, '11	Feb 9, '11	Feb 10, '11	1 "	"
	General Construction	Mar 31, '11	Apr 3, '11	Apr 13, '11	13 "	"
	Heating, Ventilating and Temperature Regulation	Oct 10, '11	Oct 16, '11	Nov 6, '11	20 "	36 "
	Electric Equipment	Nov 27, '11	Dec 2, '11	Jan 4, '12	27 "	38 "
	Furniture	Feb 29, '12	Mar 7, '12	Mar 21, '12	11 "	21 "
* RETURNED FOR APPROVAL OF DAP W.S.G. & E.						
	<u>PUBLIC SCHOOL 61, MANHATTAN</u>					
	General Construction	Apr 24, '11	Apr 25, '11	May 25, '11	30 "	31 "
	Heating, Ventilating and Temperature Regulation	Jan 10, '12	Jan 13, '12	Jan 25, '12	7 "	15 "
	Electric Equipment	June 17, '12	June 19, '12	July 11, '12	12 "	24 "
* REPORT RECOMMENDING DISAPPROVAL WAS DATED						
	10 THE B'D OF EDUCATION THEN AGREED TO MAKE THE					
	11 APPENDMENTS REQUESTED WHEN THEY HAD PREVIOUSLY					
	12 REUSED B'D OF ED. REPORT RECOMMENDING APPROVAL WAS SUBMITTED.					

C. O. S. I. Report #4 Chas. O. Armstrong & Son

Feb 6, 1912.

Chart 13	DATE OF TRANSMISSION BY BOARD OF EDUCATION	DATE REC'D BY ASS. ENG. OF FINANCE DEPT.	DATE OF REPORT	DATE OF APPROVAL BY B.O. OF ESTIM. & REPORT	TIME REQUIRED FOR REPORT	TOTAL TIME FROM DATE OF TRANS. TO DATE OF APPROVAL
BUSHNICK HIGH SCHOOL, B'K.	May 6, '11	May 8, '11	May 29, '11	June 1, '11	21 days	25 days
General Construction						
ADDITIONS TO PUBLIC SCHOOL 132, MAN.	June 23, '11	June 23, '11	June 30, '11	July 6, '11	6 "	13 "
General Construction	Mar. 29, '12	Mar. 29, '12	Apr. 11, '12	Apr. 25, '12	12 "	29 "
Heating, Ventilating and Temperature Regulation	Apr. 3, '12	Apr. 3, '12	Apr. 10, '12	Apr. 18, '12	7 "	15 "
Electric Equipment	June 13, '12	June 13, '12	July 1, '12	July 11, '12	14 "	29 "
Furniture						
PUBLIC SCHOOL 20, B'K.	July 12, '11	July 14, '12	July 22, '11	July 27, '11	8 "	15 "
General Construction	May 29, '12	May 29, '12	June 1, '12	June 13, '12	9 "	15 "
Heating, Ventilating and Temperature Regulation	June 11, '12	June 13, '12	June 25, '12	July 11, '12	12 "	30 "
Electric Equipment						
ADDITIONS TO PUBLIC SCHOOL 78, MAN.	July 26, '12	July 29, '11	Aug 9, '11	Aug 9, '11	11 "	12 "
General Construction	Jan. 27, '12	Jan. 29, '12	Feb 1, '12	Feb 8, '12	3 "	12 "
Heating, Ventilating and Temperature Regulation	Apr. 25, '12	Apr. 29, '12	May 1, '12	May 31, '12	18 "	36 "
Electric Equipment	July 1, '12	July 5, '12	July 8, '12	July 11, '12	3 "	10 "
Furniture						
* APP'D BY THE COMPTROLLER						
PUBLIC SCHOOL 45, B'K.	Aug 10, '12	Aug 11, '11	Aug. 24, '11	Aug. 24, '11	13 "	14 "
General Construction	Dec. 30, '11	Dec. 27, '11	Jan 10, '12	Jan 13, '12	3 "	27 "
Heating, Ventilating and Temperature Regulation	June 17, '12	June 19, '12	July 1, '12	July 6, '12	10 "	22 "
Electric Equipment						
* APP'D BY THE COMPTROLLER						
NEW NORMAL COLLEGE	Aug. 20, '11	Sept 1, '11	Sept 1, '11	Sept 2, '11	3 "	16 "
General Construction						
* APP'D BY THE COMPTROLLER						
PUBLIC SCHOOL 92, QUEENS	Sept 2, '11	Sept 2, '11	Sept 2, '11	Sept 2, '11	7 "	7 "
General Construction	Oct. 1, '11	Oct. 2, '11	Oct. 2, '11	Oct. 5, '11	7 "	16 "
Heating, Ventilating and Temperature Regulation	Apr. 29, '12	Apr. 26, '12	May 12, '12	May 31, '12	21 "	37 "
Electric Equipment	June 2, '12	June 2, '12	June 3, '12	June 5, '12	2 "	20 "
Furniture						
* APP'D BY THE COMPTROLLER						

Feb 14, 1913

Chas. G. Armstrong & Son

Report #4

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Report #4

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Report #4

C. an S. I.

Chart 14	DATE OF TRANSMISSION BY BOARD OF EDUCATION	DATE RECEIVED BY ASS. ENG. OF FINANCE DES.	DATE OF REPORT	DATE OF APPROVAL BY BOARD OF ESTIM. & REPORT	TIME REQ'D FOR REPORT	TOTAL TIME FROM DATE TRANS. TO DATE APPROV.
ADDITIONS TO PUBLIC SCHOOL 43, B'X. General Construction on existing frame building and Temperature Regulation Equipment	SEP. 13, '11 JUNE 19, '12 JUNE 29, '12	SEP. 16, '11 JUNE 17, '12 JUNE 26, '12	SEP. 27, '11 JUNE 27, '12 JULY 5, '12	AUG. 5, '11 JULY 11, '12 JULY 13, '12	11 Days 10 " 9 "	22 Days 22 " 23 "
PUBLIC SCHOOL 38, B'X. General Construction	JAN. 3, '12	JAN. 6, '12	JAN. 10, '12	JAN. 25, '12	13 "	22 "
PUBLIC SCHOOL 173, B'X. General Construction	NOV. 29, '11	DEC. 2, '11	DEC. 26, '11	JAN. 1, '12	24 "	36 "
PUBLIC SCHOOL 174, B'X. General Construction	JAN. 9, '12	JAN. 6, '12	JAN. 16, '12	JAN. 18, '12	10 "	14 "
ADDITIONS TO PUBLIC SCHOOL 73, MAN. General Construction	JAN. 27, '12	JAN. 29, '12	FEB. 7, '12	FEB. 15, '12	9 "	19 "
PUBLIC SCHOOL 28, S'X. General Construction	JUN. 9, '12	JUNE 5, '12	JUNE 12, '12	JUNE 20, '12	12 "	16 "

Cons. I, Report #4, Chas. G. Armstrong & Son.

Feb. 1, 1913.

COPY OF STATEMENTS SENT TO
DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY,

BY

MR. CHARLES G. ARMSTRONG

EXHIBIT "C"—PART I.

SCHOOL		PLANS	TIME CONSUMED		TIME ELAPSED	
			WKS.	DYS.	WKS.	DYS.
BOYS' HIGH SCHOOL (BKLYN.)	Con. plans	F-Not required A-				
	H. & V. plans	F-Not required A-				
	Elec. plans	F-July 15, 1911 A-Aug. 18, 1911	4	6	4	6
WASHINGTON IRVING H. S.	Con. plans	F-Not required A-				
	H. & V. plans	F-Aug. 15, 1911 A-Sept. 15, 1911	4	2		
	Elec. plans	F-July 5, 1911 A-July 8, 1911	-	3	4	5
SCHOOL 178 (BKLYN.)	Con. plans	F-Not required A-				
	H. & V. plans	F-Not required A-				
	Elec. plans	F-May 26, 1911 A-June 15, 1911	2	6	2	6
SCHOOL 171 (BKLYN.)	Con. plans	F-Not required A-				
	H. & V. plans	F-Not required A-				
	Elec. plans	F-May 8, 1911 A-May 12, 1911	-	4	-	4
SCHOOL 47 (BRONX)	Con. plans	F-Feb. 28, 1911 A-Mar. 23, 1911	3	3		
	H. & V. plans	F-Not required A-Not required				
	Elec. plans	F-Dec. 8, 1911 A-Dec. 29, 1911	3	0	6	3
SCHOOL 40 (QUEENS)	Con. plans	F-Feb. 28, 1911 A-Mar. 23, 1911	3	3		
	H. & V. plans	F-Not required A-				
	Elec. plans	F-Oct. 9, 1911 A-Oct. 31, 1911	3	1	6	4
SCHOOL 61 (MAN.)	Con. plans	F-Apr. 7, 1911 A-Apr. 19, 1911	1	5		
	H. & V. plans	F-Not required A-				
	Elec. plans	F-Apr. 19, 1912 A-June 5, 1912	6	5	8	3

EDUCATIONAL INVESTIGATION

SCHOOL	PLANS	TIME CONSUMED		TIME ELAPSED	
		WKS.	DYS.	WKS.	DYS.
BUSHWICK H. S.	Con. plans	F-Apr. 21, 1911			
		A-May 1, 1911	1-2		
	H. & V. plans	F-May 15, 1912			
	Disapvd.	-June 28, 1912	4-3		
		F-July 22, 1912			
	Disapvd.	-Aug. 3, 1912	1-5		
		F-Aug. 10, 1912			
		A-Aug. 17, 1912	1-0		
	Elec. plans	F-July 24, 1912			
		A-Aug. 17, 1912	3-3	8-3	
SCHOOL 132 (MAN.)	Con. plans	-May 13, 1911			
		-May 16, 1911	0-3		
		-June 10, 1911			
		-June 21, 1911	1-4		
	H. & V. plans	F-Mar. 26, 1912			
		A-Apr. 6, 1912	4-2		
	Elec. plans	F-Feb. 14, 1912		9-1	
		A-Mar. 5, 1912	2-6		
SCHOOL 20 (BRONX)	Con. plans	F-June 16, 1911			
		A-July 11, 1911	3-3		
	H. & V. plans	F-Not required			
		A-			
	Elec. plans	F-May 24, 1912			
		A-July 5, 1912	1-4		
	Furn. plans	F-Apr. 12, 1912		9-0	
		A-May 11, 1912	4-0		
SCHOOL 78 (MAN.)	Con. plans	F-July 13, 1911			
		A-July 19, 1911	0-6		
	H. & V. plans	F-Not required			
		A-			
	Elec. plans	F-Feb. 27, 1912		5-2	
		A-Apr. 3, 1912	4-3		
SCHOOL 45 (BRONX)	Con. plans	F-July 21, 1911			
		A-Aug. 8, 1911	2-4		
	Elec. plans	F-May 14, 1912			
		A-June 13, 1912	4-2		
	H. & V. plans	F-		6-6	
		A-Mar. 26, 1912			
NORMAL COL- LEGE (MAN.)	Con. plans	F-Aug. 22, 1911			
		A-Aug. 28, 1911	0-6		
	H. & V. plans	F-July 17, 1912			
		A-July 29, 1912	1-4		
	Elec. plans	F-June 5, 1912		10-6	
		A-Aug. 3, 1912	8-3		
SCHOOL 92 (QUEENS)	Con. plans	F-Aug. 3, 1911			
		A-Aug. 21, 1911	2-4		
	H. & V. plans	F-Not required			
		A-			
	Elec. plans	F-Jan. 26, 1912		7-4	
		A-Mar. 2, 1912	5-0		

SCHOOL	PLANS	TIME CONSUMED		TIME ELAPSED	
		WKS.	DYS.	WKS.	DYS.
SCHOOL 43 (BRONX)	Con. plans	F-Sept. 2, 1911			
		A-Sept. 12, 1911	1 - 3		
	H. & V. plans	F-Not required			
		A-			
	Elec. plans	F-June 3, 1912			
		A-June 21, 1912	2 - 4	4 - 0	
SCHOOL 39 (BRONX)	Con. plans	F-Dec. 18, 1911			
		A-Jan. 2, 1912	1 - 5	1 - 5	
SCHOOL 173 (BKLYN.)	Con. plans	F-Nov. 8, 1911			
		A-Nov. 28, 1911	2 - 6	2 - 6	
SCHOOL 174 (BKLYN.)	Con. plans	F-Dec. 15, 1911			
		A-Jan. 2, 1912	2 - 2		
	H. & V. plans	F-Not required			
		A-			
	Elec. plans	F-Aug. 1, 1912			
		A-Aug. 26, 1912	3 - 2	5 - 4	
SCHOOL 72 (MAN.)	Con. plans	F-Jan. 11, 1912			
		A-Jan. 17, 1912	0 - 6		
	H. & V. plans	F-July 24, 1912			
		A-Aug. 8, 1912	2 - 0		
	Elec. plans	F-Aug. 1, 1912			
		A-Sept. 10, 1912	5 - 4	7 - 3	
SCHOOL 28 (BKLYN.)	Con. plans	F-May 10, 1912			
		A-June 3, 1912	3 - 2	3 - 2	

EXHIBIT "C"—PART 2

THE CITY OF NEW YORK

DEPARTMENT OF

WATER SUPPLY, GAS AND ELECTRICITY

Case No. 2837.

November 25, 1912.

MR. CHARLES G. ARMSTRONG,

*Charles G. Armstrong & Son,**149 Broadway, City.*

DEAR SIR:—Referring to your letter of October 14, which was referred to me by the Commissioner for answer, in which you state that the School Inquiry Committee of the Board of Estimate and Apportionment has directed you to make an investigation of the delays in the construction of School Buildings, and enclosing with your letter certain items from the Board of Education showing the time consumed in the examina-

tion and approval of plans for electrical or gas equipment submitted to this Department.

You ask if these dates are correct. In some cases they are, and in others they are not. The same is true of your elapsed time calculations. The inferences to be drawn from these later calculations are misleading, so I have indicated on the list sent me the differences in dates and in the time lapsed from the dates given for the various schools.

You further ask us to let you know what action our Department took between the time the matter was actually referred to us and the time the matter left our Department. You then go on to ask us if we advised the School Board in any way as to plans or specifications, or suggested any changes or alterations, or was any saving effected in the cost of operation, or increased efficiency; what was the nature of the suggestions? Further, you ask if we have any constructive suggestions to make for cutting down delays in approving plans for school buildings.

The questions you ask, and the list you sent us, have rendered necessary a careful analysis of each instance, which, in turn, requires much time.

You will understand, of course, that the requirements of the Board of Estimate and Apportionment are that we should pass on all the specifications and plans for electric work made up by any Department, this rule being in accordance with the Charter and the Corporation Counsel's opinion as to our functions under the Charter. Further, the Finance Department requires us to certify to them, before payment for any electric work is made, that the work has been executed in strict accordance with the plans and specifications. This requires us to make a careful review of each plan and specification, and also many inspections and careful tests as to the performance of apparatus, insulation tests, loss in wiring, and so on; such work being entirely outside of the Bureau of Electrical Inspection, which passes on the various installations and certifies that they are, or are not, in accordance with the City Code, requiring the use of approved methods and appliances.

In accordance with these requirements we have made many suggestions and had much correspondence with the Superintendent of School Buildings in connection with all this work. So far as possible, with the Superintendent's office, we have tried to standardize in the various Boroughs equipments in a number of schools which could come under a standard specification. We have, at various times, suggested changes or alterations, and trust that in such suggestions we have at least increased the efficiency of the installation, as well as its safety and life. The larger number of school installations include only some motor operated machinery, so that the changes, in the larger number of cases, were probably changes in first cost and in efficiency in illumination and in the use of both gas and electricity.

As to suggestions we could make for cutting down delays in approving plans for school buildings, I would say—

FIRST, that if possible the specifications should be standardized even more than they are now, so as to include more schools under standard specifications, in contradistinction to those which require special treatment or investigation.

SECOND, that the Building Bureau of the Department of Education should avoid sending us, at times, a large number of specifications and plans at once—so many, in fact, that, in order to get them out, we would have to stop work on the many other buildings of other Departments, and devote ourselves entirely to the Department of Education for a period too long for us to contemplate, with our present force.

THIRD, that the Department of Education should send us all the specifications of a building at once—not scattered throughout a year as at present.

Apparently, to get the total time of delay in a school, you add the time taken on each plan together. This is not correct, and the inference drawn, in consequence, is unfair. Take Public School No. 47, Bronx, for example. Construction plans filed February 28, 1911, were reviewed in three weeks and two days. The electric plans were filed October 9, 1911, and passed in three weeks and one day. You charge us with the sum of elapsed time, six weeks and three days. If both plans were sent together they would have taken about three and one-half weeks. It is difficult to see where the time used in passing the construction or gas plans delayed the construction of the building to any extent.

FOURTH, that the Department of Education should separate its fixture plans from the piping or wiring plans. The time between the beginning of piping or wiring and the time when fixtures are needed is long. In many instances this would save time in our office, for frequently the fixture work and sketches take much time to go over, delaying the main specifications, which could be avoided and no actual time lost in the construction of the whole building, by submitting the fixture specifications later.

FIFTH, that the School Inquiry Committee of the Board of Estimate and Apportionment recommend that we be allowed more men for the work now coming upon us than we have at present, without cutting down the forces of the Department, which are devoted to other important subjects.

Taking up now your list of separate specifications and the time elapsed on each specification (not added together by schools), the only true inference as to delay to be drawn from your dates is the average time each plan took. Correcting the lists of schools and time by our records, eliminating Public School No. 178, as unknown, also the Bushwick High School and Normal College, which were exceptional, requir-

ing much discussion and correspondence as to the machinery equipment and steam supply, the number of separate plans is thirty-six (36) and the elapsed time is eighty-nine (89) weeks and six (6) days—an average of two weeks and $3\frac{1}{2}$ days. Even adding the High School and College makes an average of two weeks and $5\frac{1}{2}$ days.

This time could be further reduced by showing when the Department of Education used up time in substitution of plans after filing, etc.; also by specifying plans to go ahead of others, so delaying some, when they were sent in big batches, and by minor discussions on various matters. Such discussion was necessary, but cannot be charged entirely against this Department, as you show it. It seems unnecessary to go into these details.

Under normal conditions at present, the plans take about two to three weeks to be reached and passed. This is about the average time for specifications and plans of average size. We have from 100 to 150 installations before us all the time, so that a plan cannot be taken up on receipt, but must await its turn. At certain periods of the year, when the Corporate Stock Budget is made up, and at the end of the year, when funds become unavailable by the expiration of the fiscal year, we have to devote ourselves to certain plans entirely, to the neglect of all others for several weeks, for the reason that if not before the Board of Estimate and Apportionment by a certain date, the funds are lost.

Very often we are flooded with such plans sent in by other Departments at the last moment. In the summer season our force is also much reduced by vacations, as noted in my letter to the Building Bureau, of September 9, 1912. In consequence, about the above average time may be assumed as necessary for the average plan to be passed. This cannot be improved except by additional force.

On this basis it is hardly necessary to answer in detail your inquiries on a number of schools which were cared for within from two to three weeks.

I would also call your attention to the fact that in several instances the date given by the Department of Education in sending plans is a number of days before we received them. Consequently we use the date of receipt in establishing elapsed time.

As a matter of fact, considering the often delayed transmission of letters, the bulk of the work accomplished, the correspondence and discussion necessary in the case of exceptional installations, such as Normal College, Bushwick High School and so on, and, in consideration of the number of men we have to devote to this work, I do not think any of the schools mentioned show any abnormal loss of time due to this Department. Each specification here is given careful attention, and to do this properly, on the engineering lines I have insisted upon, requires a certain length of time. When it is borne in mind that, as stated, there have always been before us for the last two years from one hundred to one

hundred and fifty plans and specifications for review and approval, coming from all the different departments. I think the Department of Education's work has been done promptly, and that the elapsed time, with our present force, was required to properly review the specifications. I am,

Very truly yours,

(Signed) C. F. LACOMBE,

Chf. Engr. of Light and Power.

EXHIBIT "C"—PART 3

THE CITY OF NEW YORK

DEPARTMENT OF

WATER SUPPLY, GAS AND ELECTRICITY

September 10, 1912.

MR. CHARLES G. ARMSTRONG,

149 Broadway, Manhattan.

DEAR SIR:—Confirming the information already furnished to Mr. Hallock of your office, in relation to the date of receipt of certain plans showing proposed lighting arrangement in Public Schools 40 and 47, in the Boroughs of Queens and The Bronx respectively, would advise that the following appears upon the records of the Bureau of Lamps and Lighting:

P. S. 40, Pacific and Union Hall Streets, Jamaica, Queens, October 24, 1911.

Received 3 sets of plans and 3 copies of specifications for electrical equipment. Nov. 1, 1911, wrote Mr. C. B. J. Snyder stating that plans were approved and delivered to Mr. Thomas, October 31, 1911.

November 10, 1911, returned 3 printed copies of specifications from Board of Education for reapproval and 3 prints of service panel with corrections. November 22, 1911, returned approved printed copies of specifications and corrected drawings of service panel.

P. S. 47, Randolph St., Lawrence and Beach Aves., Bronx.

December 8, 1911, received specifications in approved form and plans for electrical equipment.

December 12, 1911, wrote Board of Education for special fixture sketches 1 and 10.

December 14, 1911, Board of Education wrote stating that fixture sketches accompanied letter. Same were not received.

December 22, 1911, received fixture sketches.

December 29, 1911, wrote Board of Education stating that in view of the fact that Auditorium is not to be used as a theater, plans have been approved and await messenger.

January 8, 1912, printed copies of specifications received for reapproval.

January 19, 1912, printed copies of specifications returned approved.

Yours truly,

(Signed) J. L. PULTZ,

Secretary.

EXHIBIT "C"—PART 4

R. No. 23825.

Subject: Plans and specifications for Bushwick High School, Borough of Brooklyn.

July 2nd, 1912.

MR. C. F. LACOMBE,

Chief Engineer of Light and Power,

Dept. of Water Supply, Gas and Electricity.

DEAR SIR:—Referring to your communication of the 27th ultimo, as to the specifications for the heating and ventilating and electric work of the Bushwick High School, Borough of Brooklyn, in which you say that you cannot see any basis upon which to recommend the putting in of the plant and in consequence will advise that you cannot do so, would say the same was laid before the Committee on Buildings yesterday afternoon.

The Committee believes that the plant should be installed as planned, but in view of the position taken by you, has instructed me to proceed to have the plans and specifications revised to meet your wishes.

It is to be greatly regretted that your attitude in this matter was not known some time since, so as to have saved both delay and expense.

The thing now to do is to hurry the matter as rapidly as possible, so as to cause the contractors no delay, and I have urged our people to make the changes immediately.

Very truly yours,

Superintendent of School Buildings.

R. No. 24936.

Subject: Specifications for mechanical equipment, Bushwick H. S.,
Brooklyn.

August 7th, 1912.

MR. C. F. LACOMBE,

Chief Engineer of Light and Power,

Dept. of Water Supply, Gas and Electricity.

DEAR SIR:—I have yours of the third instant referring to case No. 1466, wherein you state that you regret to advise me that you are returning specifications for the mechanical equipment of the Bushwick High School without approval, on account of the clause in specification stating that—

“The Department of Water Supply, Gas and Electricity having withheld from the Board of Education permission to install the proposed complete electric generating equipment, and having intimated that such complete equipment may later be approved, it is the intention of these specifications and the plans accompanying same to provide steam and exhaust mains, grease extractor, etc., of capacities ample to suit total proposed generating plant.”

You say that you do not see that your letter gives me any justification for retaining in the specifications the full cost of this equipment and plant, with the exceptions noted (engines and dynamos), and that we should have consulted you before amending this specification and including any such clause in it.

The clause was based upon that portion of your letter of June 27th in which you state:

“Further, it appears by experience that it would be a wise course to pursue in this matter to hold off the consideration of the power plant until the actual load of the school could be determined, by running on public service for a period of about six months. The power plant could then be calculated on the exact data.”

Taking this for precisely what it means, we retained certain piping which could be put in now at slight expense as compared with the cost of installing the small piping which would later have to be torn out and replaced with larger piping in the event of its being decided to install the generating plant, and this very cost of replacement would be used in opposing its installation.

Your letter of the third instant was therefore a very great surprise to me, and in the effort to stop this apparently endless delay in obtaining approval of these specifications, I directed our Engineer, Mr. McCann,

to call upon you and endeavor to arrive at some understanding as to what you would approve.

He states that his understanding of his conference with you was that you do not expect to authorize the installation of any further generators in this school, even after actual operation of the school places the size of the plant necessary to care for same.

He has therefore eliminated from this specification all matters heretofore left therein to provide for further generators, and now forwards your specifications covering piping, boilers, etc., only adequate for heating and present electric generating equipment.

We trust that this will meet with your prompt approval.

Very truly yours,

Supt. of School Buildings.

Case 1466. No. 25333.

Subject: Mechanical Equipment, Bushwick High School, Brooklyn.

I.

August 22, 1912.

MR. C. F. LACOMBE,

Chief Engineer of Light and Power,

Dept. of Water Supply, Gas and Electricity.

MY DEAR SIR:—The letter from Mr. J. Y. Young of August 15, 1912, making certain criticisms of specifications for mechanical equipment for the Bushwick High School, Brooklyn, was received at ten o'clock A. M. on the 20th instant, an interval of five days apparently not accounted for.

It was referred to our Mr. McCann, Engineer, who meets your criticisms as follows:

"As to his suggestions I wish to advise you of our reasons for not acting as suggested by him, as follows:

"GAL. 4—The main header was designed originally to carry 900 H. P. steam output at 125 lbs. pressure. It now has to carry 675 H. P. steam output and as this amount of steam may be used at a lower pressure for heating, the pipe size is not too large for this condition, being only 10-inch. If made next trade size smaller (8-inch) it would probably result in noisy operation from surging of steam. The header to engine room and other lines where feasible, have been reduced.

"The clause referred to was inserted to save need for retaining several drawings—sizes have been remarked thereon.

"GAL. 5—House hot water heater is to be connected to both and supplied with either live steam or exhaust steam, as shown on plan.

"Specification does not state which is to be used. Mr. Young's idea is therefore followed by us.

"GAL. 15—Size of steam driven boiler feed pump is left unchanged as next smaller size of this class of pump would have to work at high speed to care for 670 H. P. boiler and our practice is to use pumps large enough to work slowly and thus we obtain long life, little wear, and no expense for repairs. Smaller pump would run much faster and cost more for maintenance and possibly need repairs causing shut down for some time. We have electric feed pump but both may be in trouble at once if not carefully handled. There would be little gain in smaller piping than we now show for pump lines and operation would be more noisy.

"GAL. 19—The types of engine valves and the guarantees specified are taken from data furnished by the specified makers, both for simple and for compound engines and are specified as per requests of such manufacturers; of course, with our own belief that they were proper.

"It is doubtful if we would have specified shop tests had we originally intended to specify one 75 KW unit only, but our past experience with generating equipments has clearly demonstrated the need for shop tests, if anything like economy is to be attained.

"The next of Mr. Young's items refers back to

"GAL. 15—Pumps, and questions pumps being specified for 200 lbs. working pressure whereas boiler pressure is 130 lbs. This is done to obtain a strong construction in pumps, so that pumps will remain in good order for years. The 200-lb. W. P. pumps are the next heavier pattern than the 150-lb., and our experience in Stuyvesant High School with a 150-lb. W. P. Worthington boiler feed pump used against 130 lbs. boiler pressure was so disastrous that we see no reason for changing present specification in this particular.

"(In S. H. S. we had to replace Worthington pump as it repeatedly broke down and was unable to stand the strain of feeding boilers there.)

"GAL. 20—If it is worth while putting in an engine generator at all, it is worth doing well, and, as above suggested, it was our intent to specify and obtain apparatus of the best modern practice.

"As to engine cylinder ratios, one of the two types of compound engines specified has ratio of 2.7 and the other 3.2; the latter type engine was added after the clause referred to was written and the conflict of ratio with said clause was accidentally overlooked, but is not of serious consequence, as specified size would govern, and, except for this one specified engine, the specified ratios should hold good.

"The motor generator set is for breakdown and summer use for elevator, variable speed motors in shops, laboratory uses of direct current,

etc., for which an A. C. generator alone, i. e., without rotary transformer or motor-generator, would be improper and inadequate.

"Mr. Young suggests use of 100 lbs. working pressure on plant to cheapen installation, but as this would not appreciably cheapen specified construction except at the expense of life and safety, we did not deem it wise to so cheapen and lessen efficiency of plant, especially as this plant is secondarily intended for demonstration and educational purposes.

"I feel, therefore, that none of Mr. Young's suggestions are serious and for most of them there may well be a difference of opinion as to the engineering practice involved.

"Very truly yours,

Supt. of School Buildings."

MR. McCANN'S REPORT TO MR. SNYDER

On July 1st, 1912, Mr. McCann reported by letter to Mr. Snyder that plans and specifications have been disapproved by the Department of Water Supply, Gas and Electricity as per letter of June 27th and adds that—

"They insist that for such an installation it is cheaper to obtain electricity for power and light from the lighting company than to generate it ourselves.

The said Department claims the power to decide such matters for us and, under the circumstances, we deem it wise to change the present plans and specifications in so far as is necessary to omit all generating units except the smaller one, which is needed for educational purposes, and can also be used to generate the direct current required for certain motors which must be variable speed direct current motors. Another change demanded is to make all other than the few motors mentioned above alternating current, to suit local street current.

We recommend that motor drives, as now laid out, for blowers, etc., be continued so that in case said Department later authorizes us to install our own plant as intimated in their letter, there will be no need for changes to blower drives, etc.

We also recommend that the boilers and piping, etc., be left as designed for same reason.

Kindly instruct us in this matter so that we may revise plans and specifications as soon as possible.

Respectfully,

Chf. Heating and Ventilating Div.

Chf. Electrical Division."

INFORMATION REQUESTED OF MR. C. B. J. SNYDER, SUPERINTENDENT
OF SCHOOL BUILDINGS, BY MR. C. F. LACOMBE, CHIEF ENGINEER
OF THE DEPARTMENT OF WATER SUPPLY, GAS AND
ELECTRICITY, UNDER DATE OF MAY 29, 1912

With reference to the specification number 77 for the installation of heating and ventilating apparatus, and electrical generator equipment in the Bushwick High School, Brooklyn, Mr. Lacombe requested the number of lamps and motors, and the approximate hours use of same.

*Extract from Letter to Mr. Snyder from Mr. Lacombe, Under Date of
June 27, 1912*

"Referring to the matter of the specification for Bushwick High School recently sent to us, you advise us that the best comparison we could use in this matter is in connection with the Manual Training School. Assuming the highest load accorded for any one year in the Manual Training School and assuming a proportionate use of lighting and power, the Bushwick High School would only attain a total kilowatt hour use of about 4,500 kilowatt hours per year, which would cost at the wholesale rate about \$3,200 per year.

"The interest and depreciation on the cost of the power plant going into this school, so nearly reaches the total cost of the purchased current per year, that I cannot see any basis on which to recommend putting in of the plant and, in consequence, would advise that I cannot do so.

"Further, it appears by experiment that it would be a wise course to pursue in this matter to hold off the consideration of the power plant until the actual load of the school could be determined, by running on Public Service for a period of about six months. The power plant could then be calculated on the exact data. I am referred in this to the cost of dynamos, engine auxiliaries and steam piping. This procedure would obviate putting in the plan on a basis of estimated load only.

"My experience has shown that involuntarily the use of kilowatt hours of electric current to City buildings is considered overestimated.

"This school is in an alternating current district and either two phase or three phase power can undoubtedly be secured, so that you may calculate in your wiring plans on whatever proves to be the cheapest or the most convenient for your purpose.

"I return herewith specification * * *

A Communication was Received by Mr. Snyder from Mr. Lacombe Advising that Specification for Mechanical Equipment of Bushwick High School was Being Returned Unapproved on Account of Clause in Same Reading as Follows—

"The Department of Water Supply, Gas and Electricity having withheld from the Board of Education permission to install the proposed complete electric generator equipment, and having intimated that such complete equipment may later be approved, it is the intention of these specifications, and the plans accompanying same, to provide steam and exhaust mains, grease extractor, etc., of capacities ample to suit total proposed generator plant."

Letter goes on to say—

"I do not see that my letter gives you any justification for retaining in the specification the full cost of this equipment and plan with the exception noted. On your own showing of use of current, much of this is unnecessary and should not be installed."

Extract from Communication of Mr. J. T. Young.

The letter states that Mr. Snyder has quoted him wrongly and continuing that Mr. Snyder might have quoted paragraph—

"The interest and depreciation of the cost," etc., also contain criticism of Gals. 4, 5, 15, and 19.

Chart 15

SCHOOL	INSTALLATION	THE RECORDS OF THE DEPARTMENT OF WATER SUPPLY, GAS & ELECTRICITY SHOW:			THE TABULATED STATEMENT REC'D FROM MR C. E. ARMSTRONG SHOW		
		DATES	TIME CONSUMED	DATES	TIME CONSUMED	DATES	TIME CONSUMED
BOYS HIGH SCHOOL B'X	ELECTRIC	Rec'd Aug 2, 11 App'd Aug 18, "	2 WEEKS and 4 DAYS	F July 15, 11	4 WEEKS and 6 DAYS	F July 15, 11	4 WEEKS and 6 DAYS
	Heating and Ventilating	Our Records Contain No Refer- ence to This Specifications		F Aug 18, "	4 WEEKS and 3 DAYS	F Aug 18, "	4 WEEKS and 3 DAYS
WASHINGTON IRVING HIGH SCHOOL	Electric Elevator, Ash Hoist, etc.	Rec'd Aug 16, 11 App'd Sep 15, "	4 WEEKS and 2 DAYS	F Aug 16, 11	4 WEEKS and 3 DAYS	F Aug 16, 11	4 WEEKS and 3 DAYS
	ELECTRIC	Rec'd June 20, 11 App'd June 28, "	1 WEEK and 1 DAY	F July 5, 11	3 DAYS	F July 5, 11	3 DAYS
PUBLIC SCHOOL 178, B'X *	ELECTRIC	There is No School	178	F May 26, 11	2 WEEKS and 6 DAYS	F May 26, 11	2 WEEKS and 6 DAYS
PUBLIC SCHOOL 171, B'X	ELECTRIC	Rec'd Mar 8, 11 App'd Mar 15, "	1 WEEK	F May 15, "	4 DAYS	F May 15, "	4 DAYS
PUBLIC SCHOOL 47, B'X.	Construction	Rec'd Mar 1, 11 App'd Mar 21, "	2 WEEKS and 6 DAYS	F Feb 28, 11	3 WEEKS and 2 DAYS	F Feb 28, 11	3 WEEKS and 2 DAYS
	ELECTRIC	Rec'd Dec 9, 11 App'd Dec 29, "	2 WEEKS and 6 DAYS	F Dec 8, 11	3 WEEKS	F Dec 8, 11	3 WEEKS
PUBLIC SCHOOL 40, QUEENS	Construction	Rec'd Mar 1, 11 App'd Mar 23, "	3 WEEKS and 1 DAY	F Feb 28, 11	3 WEEKS and 2 DAYS	F Feb 28, 11	3 WEEKS and 2 DAYS
	ELECTRIC	Rec'd Oct 10, 11 App'd Nov 1, "	3 WEEKS and 2 DAYS	F Oct 9, 11	3 WEEKS and 2 DAYS	F Oct 9, 11	3 WEEKS and 2 DAYS
PUBLIC SCHOOL 61, MAN	Construction	Rec'd Apr 7, 11 App'd Apr 20, 11	1 WEEK and 6 DAYS	F Apr 7, 11	1 WEEK and 5 DAYS	F Apr 7, 11	1 WEEK and 5 DAYS
	ELECTRIC	Rec'd Apr 20, 11 App'd June 12, "	7 WEEKS and 4 DAYS	F Apr 19, 11	5 WEEKS and 5 DAYS	F Apr 19, 11	5 WEEKS and 5 DAYS
BUSHWICK HIGH SCHOOL	Construction	Rec'd Apr 21, 11 App'd June 12, "	1 WEEK and 4 DAYS	F Apr 20, 11	1 WEEK and 3 DAYS	F Apr 20, 11	1 WEEK and 3 DAYS
	Heating and Ventilating	Rec'd May 16, 11 App'd to be consumed		F May 15, 11		F May 15, 11	
		Rec'd July 15, 11 App'd to be consumed		F July 15, 11		F July 15, 11	
		Rec'd to be consumed Aug 3		F Aug 2, 11		F Aug 2, 11	
		Rec'd Aug 10, 11 App'd to be consumed		F Aug 9, 11		F Aug 9, 11	
	ELECTRIC	Rec'd Aug 15, 11 App'd to be consumed		F Aug 14, 11		F Aug 14, 11	

* Should have been #168 B'X. Con S I Report #7 Chas G Armstrong & Son. Feb 1, 1915.

chart 16

SCHOOL	INSTALLATION	THE RECORDS OF THE DEPT. OF WATER SUPPLY, GAS & ELECTRICITY SHOW		THE TABULATED STATEMENT REC'D FROM MR. C. G. ARMSTRONG SHOW	
		DATES	TIME CONSUMED	DATES	TIME CONSUMED
PUBLIC SCHOOL 132, MAN	Construction	Rec'd May 15, 11	2 Days	F May 13, 11	3 Days
		Ap'd May 17, "	1 Week and 2 Days	F May 16, "	
		Rec'd June 12, 11	2 Days	F June 10, 11	1 Week & 4 Days
	Heating and Ventilating	Ap'd June 21, 11	5 Days	F May 26, 12	1 Week & 4 Days
	Electric	Rec'd Apr 8, "	1 Day	F Apr 6, "	2 Weeks & 6 Days
PUBLIC SCHOOL 20, B'X	Construction	Rec'd Feb 19, 12	3 Weeks and 1 Day	F Feb 14, 12	3 Weeks & 2 Days
		Ap'd Mar 7, "	1 Week	F Mar 5, "	3 Weeks & 2 Days
		Rec'd June 17, 11	5 Weeks and 2 Days	F June 16, 11	4 Weeks & 1 Day
	Electric	Rec'd Apr 4, 12	2 Days	F Apr 29, 12	6 Days
	Furniture	Ap'd May 11, "	Our Records Contain No Reference to This Specifications	F May 5, "	5 Weeks & 1 Day
PUBLIC SCHOOL 78, MAN.	Construction	Rec'd July 13, 11	16 Days	F July 13, 11	5 Weeks & 1 Day
		Ap'd July 19, "	3 Weeks and 5 Days	F July 19, "	2 Weeks & 4 Days
	Electric	Rec'd Mar 8, 12	5 Days	F Mar 3, "	2 Weeks & 2 Days
	Construction	Rec'd July 21, 11	3 Weeks and 1 Day	F July 21, 11	2 Weeks & 2 Days
	Electric	Ap'd Aug 5, "	6 Days	F Aug 5, "	5 Weeks & 1 Day
PUBLIC SCHOOL 45, B'X	Heating and Ventilating	Rec'd May 16, 12	1 Week and 6 Days	F May 12, 12	2 Weeks & 4 Days
		Ap'd June 12, "	1 Week and 6 Days	F June 12, "	2 Weeks & 4 Days
	Construction	Rec'd Apr 21, 12	6 Days	F Apr 21, 12	2 Weeks & 4 Days
		Ap'd Apr 3, "	6 Days	F Apr 3, "	2 Weeks & 4 Days
	Heating and Ventilating	Rec'd Aug 28, 11	6 Days	F Aug 28, 11	2 Weeks & 4 Days
NORMAL COLLEGE, MAN.	Construction	Ap'd Aug 28, 11	6 Days	F Aug 28, 11	2 Weeks & 4 Days
		Rec'd July 18, 12	1 Week and 4 Days	F July 17, 12	2 Weeks & 4 Days
	Electric	Ap'd July 29, "	7 Weeks and 4 Days	F July 29, "	2 Weeks & 4 Days
		Rec'd June 10, 12	4 Days	F June 5, 12	2 Weeks & 4 Days
	Construction	Ap'd Aug 2, 11	1 Week and 6 Days	F Aug 3, 11	2 Weeks & 4 Days
PUBLIC SCHOOL 92, QUEENS	Construction	Rec'd Aug 4, 11	5 Weeks and 3 Days	F Aug 3, 11	2 Weeks & 4 Days
	Electric	Ap'd Jan 27, 12	3 Days	F Jan 26, 12	2 Weeks & 4 Days
		Rec'd Mar 5, "	3 Days	F Mar 2, "	2 Weeks & 4 Days
				F Mar 2, "	2 Weeks & 4 Days
				F Mar 2, "	2 Weeks & 4 Days

C. O. S. I. Report #4 Chas. G. Armstrong vs. Feb 1, 1915.

chart 17

SCHOOL	INSTALLATION	THE RECORDS OF THE DEPT OF WATER SUPPLY, GAS & ELECTRICITY SHOW			THE REGULATED STATEMENT THEREOF		
		DATES	TIME CONSUMED	DATES	TIME CONSUMED		
PUBLIC SCHOOL 43, B'X	Construction	Recd Sep 5, 11	1 Day	5 Sep 2, 11	1 Week & 3 Days		
	Electric	Recd Sep 6 "	2 Weeks and 2 Days	5 Sep 12 "	2 Weeks & 4 Days		
		Recd June 4, 12	1 Day	5 June 3, 12	1 Week & 3 Days		
PUBLIC SCHOOL 39, B'X	Construction	Recd Dec 19, 11	1 Day	5 Dec 18, 11	2 Weeks & 4 Days		
	Construction	Recd Dec 20 "	2 Weeks and 2 Days	5 Jan 2, 12	2 Weeks & 4 Days		
		Recd Nov 9, 11	2 Weeks and 2 Days	5 Nov 8, 11	2 Weeks & 4 Days		
PUBLIC SCHOOL 173, B'X	Construction	Recd Nov 23 "	2 Weeks and 2 Days	5 Nov 20 "	2 Weeks & 4 Days		
	Construction	Recd Dec 15, 11	2 Weeks and 2 Days	5 Dec 15, 11	2 Weeks & 4 Days		
		Recd Jan 2, 12	2 Weeks and 2 Days	5 Jan 2, 11	2 Weeks & 4 Days		
PUBLIC SCHOOL 172, B'X	Electric	Recd Aug 23, 12	6 Days	5 Aug 1, 12	3 Weeks & 2 Days		
	Construction	Recd Aug 28 "	5 Days	5 Aug 26 "	5 Weeks & 5 Days		
		Recd Jan 11, 12	5 Days	5 Jan 11, 12	2 Weeks & 4 Days		
PUBLIC SCHOOL 72, MAN.	Heating and Ventilating	Recd Jan 10, 12	1 Day	5 Jan 12 "	2 Weeks & 4 Days		
	Electric	Recd Aug 12, 12	5 Weeks and 1 Day	5 Aug 8 "	2 Weeks & 4 Days		
		Recd Aug 2, 12	1 Day	5 Aug 1, 12	2 Weeks & 4 Days		
PUBLIC SCHOOL 28, B'X	Construction	Recd Sep 1, 12	1 Day	5 Sep 10 "	2 Weeks & 5 Days		
	Construction	Recd Nov 31 "	2 Weeks and 2 Days	5 May 10, 12	2 Weeks & 5 Days		
		Recd Nov 31 "	2 Weeks and 2 Days	5 June 3, 12	2 Weeks & 5 Days		

NOTE #1. The Letter of Approval of the Specification for Electric Elevator, 25th Nov. 1911, Power Equipment in
Bridgely, etc. Washington Irving High School, was sent to the Department of Education on July 23 -
6 days after receipt of the Specifications. Inasmuch as the Department of Education had no standard
Notice of Approval, the later return of the Specification to this Department for the addition of a stand-
ing signature, was not necessarily a cause of delay in the prosecution of the work.

NOTE #2 The Time Consumed in Examining, Correcting and Approving the Plans for Electric Work in Public Schools #61 and #132, Manhattan Public Schools, Bronx, N.Y., and Queens, Was to Some Extent Affected by an Agreement Between the Department of Education and the S.D. Department as to the Order in Which the Plans Examination Were to be Conducted.

Con. S. T. Report on A. Chap. G. Armstrong & Son Feb. 1, 1913.

EXHIBIT "D"—PART 1

ART COMMISSION
OF THE
CITY OF NEW YORK

October 23, 1912.

MR. CHARLES G. ARMSTRONG,
149 Broadway, City.

DEAR SIR:—I have now prepared in our office a complete list of the school buildings and all data necessary to explain why, in a few instances, there was a delay of two or more weeks. Many of the dates sent us are inaccurate, and I should be very glad if you could send a representative to the office to talk over the matter with me.

Sincerely,

(Signed) J. Q. ADAMS,
Assistant Secretary.

EXHIBIT "D"—PART 2

August 8, 1910.

MR. C. B. J. SNYDER,
500 Park Ave., New York City.

DEAR SIR:—A meeting of the Art Commission was called for Friday afternoon, August 5th. No quorum being present, the four members in attendance held an informal session at which they considered the designs submitted by you for Public School No. 95, Manhattan, and were unanimous in their approval of the same. They were likewise unanimous in their approval of the preliminary drawings for Public School No. 168, Brooklyn, and of the preliminary drawings for the new buildings of the Normal College.

This action must be ratified at the next meeting of the Commission, therefore I cannot send you the official certificates until such ratification, but I give you my personal assurance that it is morally certain that such ratification will be given and that therefore there need be no delay in the progress of your work.

Sincerely yours,

(Signed) J. Q. ADAMS,
Assistant Secretary.

EXHIBIT "D"—PART 3

ADDITION, BOYS' HIGH SCHOOL, BROOKLYN

Preliminary plans: Submitted April 8th, 1909.

Approved April 13, 1909.

Action certified April 22, 1909.

Final plans: Submitted December 6th, 1909.

Postponed December 14, 1909. Committee reported that submission was incomplete and recommended that action be postponed.

(Laid over for lack of sufficient information. Committee wanted a design of the present building, so that Commission could see how it conforms with the proposed addition.)

Photo of old building received December 27, 1909.

Progress December 28, 1909. (Letter from Mr. Snyder dated December 27, 1909, attached was read.)

(Committee postponed action with request that Mr. Snyder be present at next meeting. Present building seemed to be better than old. Committee wanted to see if something could not be done to reconcile the old with the new.)

Approved January 11, 1910. Mr. Snyder appeared before Commission and explained designs.

Action certified January 17th, 1910.

WASHINGTON IRVING HIGH SCHOOL

Preliminary plans: Submitted July 3, 1908.

Approved July 29, 1908.

Action certified August 4, 1908.

Preliminary plans: Submitted May 9, 1910 (substituted for others).

Approved May 10th, 1910.

Action certified May 14, 1910.

Final plans: Submitted June 30, 1910.

Approved July 6, 1910.

Action certified July 12, 1910.

PUBLIC SCHOOL No. 168, BROOKLYN

Preliminary plans: Submitted August 4, 1910.

Approved August 5, 1910.

No quorum was present at meeting of August 5, 1910, but plans were approved and notice was sent on August 8, 1910 (letter attached).

Action ratified at meeting on September 13, 1910.

Certified September 14, 1910.

Final plans: Submitted September 6, 1910.

Progress September 13, 1910. (Mr. de Forest did not like parapets. Very little discussion on this building.)

Approved October 11, 1910. Mr. Snyder was present.

Action certified October 18, 1910.

PUBLIC SCHOOL No. 171, BROOKLYN

Preliminary plans: Submitted September 6, 1910.

Approved September 13, 1910.

Action certified September 29, 1910.

Final plans: Submitted October 10, 1910.

Approved October 11, 1910.

Action certified October 18, 1910.

PUBLIC SCHOOL No. 47, BRONX

Preliminary plans: Submitted November 14, 1910.

Approved November 15, 1910, with request that parapets and top story be restudied.

Action certified November 23, 1910.

Final plans: Submitted January 5th or 6th, 1911, not stamped, but Mr. Armstrong has 6th. (No committee appointed.)

Approved January 10, 1911.

Action certified January 18, 1911.

PUBLIC SCHOOL No. 40, QUEENS

Preliminary plans: Submitted November 11, 1910.

Approved November 15, 1910, with request that parapets and top story be restudied.

Action certified November 23, 1910.

Final plans: Submitted January 6, 1911.

Approved January 10, 1911.

Action certified January 18, 1911.

PUBLIC SCHOOL No. 61, MANHATTAN

Preliminary plans: Submitted November 12, 1910.

Approved November 15, 1910, with request that parapets and top story be restudied.

Action certified November 23, 1910.

Final plans: Submitted January 5, or 6, 1911 (not stamped).

Approved January 10, 1911.

Action certified January 18, 1911.

BUSHWICK HIGH SCHOOL, BROOKLYN

Preliminary plans: Submitted September 8, 1910.

Approved September 13, 1910, with suggestion that central arches of second story and parapets and roof line be restudied.

Action certified September 29, 1910.

Final plans: Submitted February 11, 1911.

Approved February 14, 1911.

Action certified February 25, 1911.

PUBLIC SCHOOL No. 132, ADDITION, MANHATTAN

Final plans: Submitted May 2, 1908.

Approved May 12, 1908.

Action certified May 20, 1908.

Final plans: Submitted November 19, 1909 (substituted for others).

Approved December 14, 1909.

Action certified December 27, 1909.

PUBLIC SCHOOL No. 20, BRONX

Preliminary plans: Submitted April 5, 1911.

Approved April 11, 1911.

Action certified April 20, 1911.

Final plans: Submitted May 6, 1911.

Approved May 11, 1911.

Action certified May 22, 1911.

PUBLIC SCHOOL No. 78, ADDITION, MANHATTAN

Final plans: Submitted November 5, 1909.

Approved November 9, 1909.

Action certified November 19, 1909.

PUBLIC SCHOOL No. 45, BRONX

Final plans: Submitted November 5, 1909.

Approved November 9, 1909.

Action certified November 19, 1909.

NORMAL COLLEGE

Preliminary plans: Submitted August 4, 1910.

Approved August 5, 1910.

No quorum was present at meeting of August 5, 1910, but plans were approved and notice was sent on August 8, 1910 (letter attached). Action ratified at meeting on September 13, 1910.

Certified September 14, 1910.

Final plans: Submitted April 7, 1911.

Progress April 11, 1911. Mr. Greene appeared before Commission. On account of the importance of the site and the building the Committee wished to have more time to look over the designs. Wanted to consider this building in relation to the whole group of buildings. Wished that Mr. Snyder had more time to give attention to details. Wanted to study the tower more thoroughly and also a question as to whether the tower should dominate the group. Wanted a section that would show the actual relation. Mr. Greene is to submit some sketches.

Approved May 11, 1911.

Action certified May 22, 1911.

PUBLIC SCHOOL No. 92, QUEENS

Final plans: Submitted December 8, 1908. (Meeting held same day.)

Approved January 12, 1909.

Action certified January 18, 1909.

Final plans: Submitted November 5, 1909 (substituted for others).

Approved November 9, 1909.

Action certified November 19, 1909.

Preliminary plans: Submitted March 11, 1911 (substituted for others).

Progress March 14, 1911. (Committee thought that building was not up to standard that Mr. Snyder has set for his school work. Amount of money to build school less than former one. Wait and get reasons. City can afford to put up this one and not that one.)

Approved April 11, 1911. (Mr. Greene appeared.)

Action certified April 20, 1911.

Final plans: Submitted May 3, 1911.

Approved May 11, 1911.

Action certified May 22, 1911.

PUBLIC SCHOOL No. 43, BRONX

Preliminary plans: Submitted April 7, 1911.

Approved April 11, 1911.

Action certified April 20, 1911.

Final plans: Submitted May 6, 1911.

Approved May 11, 1911.

Action certified May 22, 1912.

PUBLIC SCHOOL No. 39, ADDITION, BRONX

Final plans: Submitted November 5, 1909.

Approved November 9, 1909.

Action certified November 19, 1909.

Preliminary plans: Submitted May 10, 1911 (substituted).
Approved May 11, 1911.
Certified May 22, 1911.
Final plans: Submitted July 24, 1911.
Approved August 8, 1911.
Action certified August 11, 1911.

PUBLIC SCHOOL No. 173, BROOKLYN

Preliminary plans: Submitted July 10, 1911.
Approved July 11, 1911, with suggestion that pinnacles be eliminated and parapets restudied.
Action certified July 17, 1911.
Final plans: Submitted August 3, 1911.
Approved August 8, 1911.
Action certified August 11, 1911.

PUBLIC SCHOOL No. 174, BROOKLYN

Preliminary plans: Submitted October 30, 1911.
Approved November 14, 1911.
Action certified November 29, 1911.
Final plans: Submitted December 1, 1911.
Approved December 12, 1911.
Action certified December 26, 1911.

PUBLIC SCHOOL No. 72, ANNEX, MANHATTAN

Final plans: Submitted December 6, 1911.
Approved December 12, 1911.
Action certified December 26, 1911.

PUBLIC SCHOOL No. 28, BROOKLYN

Preliminary plans: Submitted December 30, 1911.
Approved January 9, 1912.
Action certified January 22, 1912.
Final plans: Submitted February 6, 1912.
Approved February 13, 1912.
Action certified February 28, 1912.

EXHIBIT "E"—PART I

COMMISSIONER OF PUBLIC WORKS,
BOROUGH OF MANHATTAN

November 22, 1912.

In replying refer to No. 36945.

MR. CHAS. G. ARMSTRONG,
Singer Building, 149 Broadway, New York.

DEAR SIR:—A copy of your circular letter of October 7th, inquiring as to the cause of delay in issuing permits for vaults and areas at the schools named in the attached list, was received November 12th.

The matter has been investigated and I submit a review of the correspondence with the Superintendent of School Buildings:

SCHOOL No. 61 .

Under date of April 3, 1911, the Superintendent of School Buildings wrote to the Chief Engineer of Highways enclosing two prints of a diagram of vaults and areas and stating that if our rules required that the City pay for these vault privileges, a clause would be inserted in the specifications requiring the Contractor to pay for the same. The Chief Engineer of Highways reported to the Commissioner of Public Works on the matter April 5th and recommended that the permit be granted without charge. This report was returned to the Chief Engineer with the Commissioner's approval the same day, and was received back from the Chief Engineer's office April 6th with a footnote that the Department of Education had been notified by him to that effect.

No more was heard of the matter until May 3d, when the Superintendent of School Buildings wrote referring to his previous letter and stating that he understood unofficially that there would be no charge but would like to be sure that this information was correct. The Chief Engineer of Highways resigned May 1st, and the letter of May 3d was referred to the Acting Chief Engineer who reported that if the Superintendent of School Buildings would apply for the vault permits desired, specifying that the property belonged to the City, they would be issued without fee. This was communicated to the Superintendent of School Buildings by letter of May 6th and he applied May 9th for a permit for vaults under the sidewalk. The permit was issued May 17th.

From these facts it appears:

1—That the Superintendent of School Buildings got an unofficial reply to his first letter within three days.

2—That failure to advise this Department until May 3d that the unofficial advice received was insufficient resulted in a delay of 27 days.

The eight days chargeable to this Department between May 10th, the day the formal application for the permit was received, and May 17th, when the permit was issued, came at a period of extraordinary business in the Highways Bureau and during a change in the position of Chief Engineer, and at the beginning of a reorganization which was not completed until well toward the close of the year.

SCHOOL No. 132

On May 20, 1911, the Superintendent of School Buildings applied for a permit for vaults and areas outside of building line. This was answered May 23d by the Chief Engineer to the effect that it was against the policy of this Department to allow an area to be constructed which extended 6 feet 4 inches beyond the building line. However, if the area was to be covered with a grating flush with the sidewalk there would be no objections; but if it was to be enclosed with a railing the permit would not be issued. On May 20th the Superintendent of School Buildings replied that plans for Public School No. 132 were filed with the Department of Buildings and approved prior to January 1, 1911, at which time the regulation referred to in the Chief Engineer's letter of May 23d was not in effect. The Superintendent therefore requested that they be allowed to carry out the work as contemplated at the time of approval. The matter was referred back to the Chief Engineer, who promptly reported to the Commissioner, June 2d, against granting the permit except in accordance with his letter of May 23d. This report was referred by the Commissioner to the Consulting Engineer, who took the matter up personally with Mr. Green of the Board of Education, as shown by the Consulting Engineer's letter of June 15th beginning: "This is to confirm our conversation at the time of my call upon you some days since."

These facts show:

1—That the Superintendent's letter of May 20th was answered in three days—a reasonable time.

2—That he took six days to reply.

3—That our Chief Engineer's second report was made within three days.

4—That the matter was then taken up personally with Mr. Green of the Department of Education and a permit issued June 15th, the earliest date at which a decision in the matter could be reached.

SCHOOL No. 78

By a letter dated June 14th the Superintendent of School Buildings made application for a permit for vaults and areas outside the building line, stating that the areas would be covered with gratings flush with the sidewalk and the vaults with vault lights, iron doors, and brick arches below the sidewalk level, thus avoiding any obstruction of the sidewalk.

This letter was followed up with a communication dated July 12th stating that no reply had been received. The first letter was referred to the Permit Division June 15th and had evidently been mislaid as no action had been taken on it before the second communication came to hand. On July 20th the Acting Chief Engineer of Highways recommended that the permit be issued without charge, and this was done July 24th.

In this case there was a delay of 37 days, allowing three days as a reasonable time to grant the permit. This is 27 days more than appears on your list, as the application was dated June 14th—not July 14, as shown in your list. This delay should not have occurred and could have been prevented by the Superintendent of School Buildings telephoning or writing a follow-up letter within a reasonable time after the application was made.

NORMAL COLLEGE

Mr. Green, Deputy Superintendent of School Buildings, applied on July 26th for a permit for areas, outside the building line to be covered with gratings set flush with the sidewalk. This letter was not received until July 29th, according to the official stamp of this Department. A reply was sent August 1 that a permit was not needed.

SCHOOL No. 72

An application dated December 7th was received December 8th from the Deputy Superintendent of School Buildings for a permit for a vault under the sidewalk. Our records show that the permit was mailed December 9th without a letter of transmittal, and that an official letter of transmittal followed December 11th. Your list gives the time consumed as four days, but the permit was issued within two days and the letter was answered within three days.

If permits are not issued within three days in future I would suggest that the Superintendent of School Buildings or his deputy telephone Mr. Goldsmith, who has charge of the Permit Division.

Yours very truly,
(Signed) E. V. FROTHINGHAM,
Commissioner.

EXHIBIT "E"—PART 2

CITY OF NEW YORK
BUREAU OF BUILDINGS

October 23rd, 1912.

MR. CHARLES G. ARMSTRONG,
149 Broadway, City.

DEAR SIR:—Your letter of October 14th addressed to Department of Highways, Bronx, in reference to action on application for vault permit for P. S. No. 39, Bronx, has been referred to me by the President of the Borough of The Bronx to answer in connection with the other information furnished by this Bureau in regard to action on plans filed by the Board of Education.

P. S. No. 39—Alt. 543/11 N. E. Longwood Avenue, Kelly to Beck Street, Bronx, December 7th, 1911, application made by Board of Education to Comm. Whittle of Dept. of Public Works, Bronx, for vault permit; referred to Superintendent Henderson of Bureau of Buildings and after several communications between Board of Education, Commissioner of Public Works and Bureau of Buildings, vault permit 83/12 was granted to Board of Education, Feb. 21st, 1912.

Respectfully,

(Signed) JAMES A. HENDERSON,

Superintendent of Buildings, Borough of The Bronx.

EXHIBIT "F"—PART 1

THE BUREAU OF BUILDINGS FOR THE
BOROUGH OF MANHATTAN

October 18th, 1912.

MR. CHARLES G. ARMSTRONG,
149 Broadway, City.

DEAR SIR:—In reply to your letter of October 14th relative to the action of this Bureau on plans for certain public schools, I enclose you herewith a synopsis of the actions of this Bureau on the several applications referred to.

As to whether we found it necessary to advise the School Board in any way as to plans and specifications, I would say that it is not the function of this Bureau to do so and this Bureau at no time volunteers information or advice. We do not offer any suggestions for changes or alterations unless it should be incidentally in the discussion of an objection made by this Bureau. This Bureau is not concerned except as a matter of record, with the cost of buildings or their usefulness for the particular purposes which they are to serve.

As to delays on these plans, I would say that in the case of the Washington Irving High School and in the case of the Normal College our record shows that there was unnecessary delay in this Bureau. This was due to several causes which, however, no longer operate. In the case of the Washington Irving High School, the plans were here at a time when the Bureau was shorthanded in its engineering division. *In the case of the Normal College, the examiner of these plans evidently had some reason of his own for delaying his action. This man is no longer connected with this Bureau. In the case of the other buildings, however, no unusual delay occurred in examining the plans. It is not practicable to examine and approve plans for buildings of so large a magnitude as our public school buildings in a shorter time than that used for these two buildings.

I have no suggestions to offer for improvement in this matter so far as this Bureau is concerned, as everything has been done here that possibly can be done to act on plans promptly. If you wish to look over these matters more in detail, if you will call at this office by appointment I will have the inspector assigned to me personally go over the matter with you.

Yours truly,

(Signed) RUDOLPH P. MILLER,

Superintendent of Buildings.

*Item—I

WASHINGTON IRVING HIGH SCHOOL (ITEM 2)

August 6th, 1910—Application filed.

August 15th, 1910—Application disapproved.

Objections:

- 1—File detail of roof trusses.
- 2—Give size of angle iron uprights enclosing terra cotta in elevator shaft.
- 3—Plan and application do not agree as to thickness of 5th story front wall, as to 4th story rear wall.
- 4—State if foundations go to rock, if not, give construction of footings.

5—Give location of aisles, seats, stating capacity, etc.

6—Is there any curtain on stage, if so, it must run in metal grooves.

7—Curtain wall construction must conform to the requirements of this Bureau.

August 20th, 1910—Amendment filed covering objections: also changed the depth of foundations from 17' 0" to 23' 6" and material of foundation walls from brick to Portland Cement concrete.

August 31st, 1910—Disapproved.

Objections:

8—As to thickness of concrete foundation walls.

September 2d, 1910—Amendment filed—Contention that foundation walls were of lawful thickness.

September 8, 1910—Disapproved—Objection No. 8 repeated.

September 12, 1910—Objection No. 8 waived by the Superintendent of Buildings—Application reconsidered and approved.

NORMAL COLLEGE

(1st Part)

June 28th, 1911—Application filed.

July 20th, 1911—Application disapproved.

Objections:

1—Indicate on foundation plans footings which are not to rest on rock. Footings apparently overload the soil. Footings should be carried to rock.

2—Rear wall is of unlawful thickness and material.

3—Steps extending beyond building line should not extend more than 18 inches and should be protected by cheek piece 3' or higher.

4—Specify construction of roof covering for peaked roof.

5—Specify method of fireproofing columns, girders and trusses.

6—Give typical detail of stair framing.

July 22nd, 1911—Amendment filed—Objection No. 2 answered "Building is to be erected in sections—4" terra cotta wall is a temporary enclosing wall carried on steel beams at each story."

July 26th, 1911—Memo from Examiner to Chief Engineer asking if temporary terra cotta wall could be accepted.

July 27th, 1911—Answer in the negative by the Chief Engineer.

July 29th, 1911—Amendment disapproved—Objection No. 2 repeated.

Aug. 10th, 1911—Amendment filed—Objection No. 2 answered "brick curtain wall used in place of 4" terra cotta wall."

Aug. 16th, 1911—Application approved.

PUBLIC SCHOOL No. 72

Manhattan

January 30th, 1912—Application filed.

February 5th, 1912—Application disapproved.

Objections:

- 1—Proposed one-story frame structure is unlawful, Sec. 143.
- 2—Walls have excessive openings.
- 3—Provide tie-rods.
- 4—Openings to coal vaults should be within 12" of the curb line.
- 5—Show framing of outside stairs.
- 6—Lintel beams are apparently weak.

February 10th, 1912—Amendment filed.

February 16th, 1912—Application approved.

PUBLIC SCHOOL No. 61

Manhattan

March 28th, 1911—Application filed.

April 4th, 1911—Application disapproved.

Objections:

- 1—Fire escapes required, Sec. 103.
- 2—Construction of playground walls around roof is unlawful, Sec. 27.
- 3—Piles should be driven to refusal.
- 4—Piles should not be spaced more than 36" apart.
- 5—Walls have excessive openings.
- 6—Steps to street must have cheek pieces at least 3' high at sides of same.

April 12th, 1911—Letter from Superintendent of School Buildings to arrange for an interview as to objection requiring fire escapes. (Had seen Chief Engineer) Explanation of means of exit.

April 22nd, 1911—Chief Inspector withdrew objection requiring fire escapes.

April 26th, 1911—Application amended.

April 29, 1911—Application approved.

EXHIBIT "F"—PART 2

CITY OF NEW YORK
BUREAU OF BUILDINGS

October 15, 1912.

MR. CHARLES G. ARMSTRONG,

149 Broadway, New York City.

DEAR SIR:—Your letter of October 14th received in reference to the action of this Bureau on plans filed by the Board of Education.

If you will let me know when it is convenient for you to call at this office, preferably in the afternoon, I will have a representative of the Bureau take the matter up with you for investigation and I believe you will be convinced that there is not any unnecessary delay in the examination of the plans filed by the Board of Education.

Respectfully,

(Signed) EDWARD J. L. RALDERIS,

*Chief Inspector and Acting Superintendent of Buildings, Borough of
The Bronx.*

CITY OF NEW YORK
BUREAU OF BUILDINGS
BOROUGH OF THE BRONX

October 23, 1912.

MR. CHARLES G. ARMSTRONG,

149 Broadway, City.

DEAR SIR:—I enclose herewith a statement of the action of this Bureau on the following plans filed by the Board of Education, as requested in your letter of October 14, 1912.

PUBLIC SCHOOL No. 20, BRONX

Alt. 303/11—4-story and basement brick extension 50' x 75' 8" S/S
167th St. between Fox and Simpson Sts.

Plans and applications filed July 1, 1911.

Approval Topographical Bureau July 1, 1911.

Inspector's Report on present building, July 6, 1911.

Plans examined as to construction July 13, 1911.

Plans disapproved July 14, 1911.

Board of Education notified of disapproval July 14, 1911.
Request for modification July 24, 1911.
Supt. approved modification July 25, 1911.
Construction approved July 27, 1911.
Board of Education notified of approval July 28, 1911.
Plumbing and drainage application filed July 1, 1911.
Plumbing and drainage examined July 31, 1911.
Plumbing and drainage approved August 1, 1911.

PUBLIC SCHOOL No. 39, BRONX

Alt. 543 11—3-story and basement brick extension 57' 2" x 138' 6"
N/S Longwood Avenue between Kelly and Beck Streets.
Plans and applications filed December 1, 1911.
Approved by Topographical Bureau Feb. 6, 1912.
Inspector's Report as to present building Dec. 4, 1911.
Plans examined as to construction Dec. 7, 1911.
Plans disapproved and Board of Education notified, Dec. 8, 1911.
Letter from Deputy Supt. Green, Board of Education Dec. 12, 1911.
Letter from Supt. of Buildings to Board of Education Dec. 13, 1911.
Amendments filed by Board of Education Feb. 5, 1912.
Construction approved Feb. 6, 1912.
Plumbing and drainage application filed Dec. 1, 1911.
Plumbing and drainage examined Feb. 16, 1912.
Plumbing and drainage approved Feb. 16, 1912.

PUBLIC SCHOOL No. 43, BRONX

Alt. 302/11—4-story and basement brick extension 75' 6" x 58' 0"
W/S Brown Place between 135th and 136th Streets.
Plans and application filed July 1, 1911.
Approved Topographical Bureau July 1, 1911.
Inspector's Report on present building July 3, 1911.
Plans examined as to construction July 13, 1911.
Board of Education notified of disapproval July 14, 1911.
Letter from Supt. Snyder as to disapproval July 17, 1911.
Letter to Supt. Snyder as to disapproval July 21, 1911.
Request for modification July 24, 1911.
Supt. of Building approved modification July 25, 1911.
Construction approved July 27, 1911.
Board of Education notified of approval July 28, 1911.
Plumbing and drainage application filed July 1, 1911.
Plumbing and drainage examined July 31, 1911.
Plumbing and drainage approved Aug. 1, 1911.

PUBLIC SCHOOL No. 47, BRONX

N. B. 1312/10—4-story and basement brick school 200' x 91' with extension 74' 4" x 53' 2" at S/S Randolph Avenue between Hammond and St. Lawrence Avenues.

Plans and applications filed Dec. 31, 1910.

Location approved by Topographical Bureau Dec. 31, 1910.

Plans examined as to construction and disapproved Jan. 9, 1911.

Board of Education notified of disapproval Jan. 9, 1911.

Letter from Supt. of Buildings, Bronx, to Supt. Snyder of Board of Education in reference to disapproval January 12, 1911.

Amendments filed by Board of Education Jan. 20, 1911.

Approved as to construction Jan. 24, 1911.

Board of Education notified of approval Jan. 25, 1911.

Plumbing and drainage application filed Jan. 20, 1911.

Bureau of Sewers approved private sewer Jan. 31, 1911.

Supt. of Buildings approved modifications as to privy vault Feb. 1, 1911.

Plumbing and drainage examined Feb. 1, 1911.

Plumbing and drainage approved Feb. 2, 1911.

I hope above statement will be found satisfactory and any further information required will be furnished upon request.

Yours respectfully,

(Signed) JAMES A. HENDERSON,

Superintendent of Buildings, Borough of the Bronx.

EXHIBIT "F"—PART 3

CITY OF NEW YORK

OFFICE OF

THE SUPERINTENDENT OF BUILDINGS

FOR THE BOROUGH OF QUEENS

October 22nd, 1912.

MESSRS. CHAS. G. ARMSTRONG & SON,

149 Broadway, Borough of Manhattan.

GENTLEMEN:—In answer to your letter of recent date, I beg to state Public School No. 40, situated on the S. W. corner of Union Hall and Pacific Streets, Jamaica, L. I., Borough of Queens, was filed in this Bureau on March 2d, 1911, and approved on March 13, 1911.

Public School No. 92, situated on W. S. Hayes Avenue, between 42nd and 43rd Streets, Corona, L. I., Borough of Queens, was filed July 11th, 1911, and approved August 2nd, 1911. An amendment was made to the floor construction, which was filed October 25th, 1911, and approved on November 16th, 1911.

There were no changes required in these plans by this Bureau. The difference in the time of filing and approval was used in the examination and checking of the drawings along with other applications which were taken up and acted upon between those dates.

Hoping this information will prove satisfactory and be of service to you, I am,

Respectfully,

(Signed) JOHN MOORE,

Superintendent of Buildings, Borough of Queens.

EXHIBIT "F"—PART 4

THE CITY OF NEW YORK

OFFICE OF THE

PRESIDENT OF THE BOROUGH OF BROOKLYN

October 16, 1912.

MR. CHARLES G. ARMSTRONG,

149 Broadway, Manhattan.

DEAR SIR:—Your communication to this Bureau, under date of October 14th, precipitated by an inquiry from The School Inquiry Committee of the Board of Estimate with reference to alleged delay in passing upon plans and specifications for public school buildings in this Borough, has been given prompt consideration, and I append herewith a detailed statement showing facts and figures, concerning the propositions which you have in mind:

BOYS' HIGH SCHOOL

Plans were filed on December 17, 1909. They were examined as to construction December 23, 1909, as to plumbing and drainage December 28, 1909, and applicant was notified December 28, 1909, that the plans were ready for correction. The plumbing and drainage plans were approved December 29, 1909, but the structural objections were not corrected until January 4, 1910, immediately after which, on the same day, this Bureau issued permit No. 52/10 authorizing the construction.

SCHOOL No. 168

Plans were filed November 15, 1910, and they were examined as to construction November 22, 1910, and as to plumbing and drainage November 26, 1910. On the same day, November 26, 1910, applicant was notified that plans were ready for correction. The plumbing and drainage plans were approved November 28, 1910, but the structural objections were not corrected until December 10, 1910, and immediately after, on the same day, permit 5282/10 was issued authorizing the construction.

BUSHWICK HIGH SCHOOL

Plans were filed May 23, 1911, and they were examined as to construction May 31, 1911, and as to plumbing and drainage June 5, 1911. While there is a stamp date missing as to time applicant was notified to make plumbing and drainage corrections, in view of the system followed here I believe he was forwarded a postal on the same day, or the following morning, to correct said condition. These objections, however, were not corrected in part until June 16, 1911, and not fully corrected until June 27, 1911, which structural objections, too, were corrected, and the plans were approved (permit No. 4084/11) authorizing the construction on the same day.

SCHOOL No. 173

Plans were filed November 10, 1911, and examined as to construction November 16, 1911. As to plumbing and drainage, they were examined on November 21, 1911, and on that date (November 21,) the applicant was notified to make corrections. The plumbing and drainage was approved November 27, 1911. The structural objections were not corrected until December 4, 1911, and on the latter date permit No. 7393/11 was issued, authorizing the construction.

SCHOOL No. 174

Plans were filed December 30, 1911, and examined as to construction January 4, 1912. As to plumbing and drainage they were examined January 9, 1912. Plumbing and drainage was approved January 17, 1912. The structural objections were not corrected until January 22, 1912, on which day plans were approved and permit No. 312/12 issued authorizing the construction.

School No. 28

Plans were filed May 4, 1912, and examined as to construction May 7, 1912. They were examined as to plumbing and drainage May 13, 1912, and on May 14, 1912, the applicant was notified that they were ready for correction. The plumbing and drainage objections were partly corrected May 22, 1912, and not fully corrected until May 31, 1912, on the same day the structural objections being also corrected, and on that day (May 31, 1912) the plans were approved and permit No. 2861 authorizing the construction issued.

I have to submit that the examination and approval of all of these plans by this Bureau was carried through promptly. As a matter of fact, we aim to give a preference to school propositions, and the above facts, I think, show that the construction of the six buildings described above was not delayed by the operations of the Building Bureau.

Answering the last paragraph of your communication, I have to advise you that I should be pleased to have you call at this office at any time between 9 A. M. and 5 P. M., excepting on Saturday, when we close at noon, to look over, if you desire to do so, the records as I have outlined them above.

Very respectfully yours,

(Signed) P. J. CARLIN,

Superintendent.

EXHIBIT "G"

July 31st, 1912.

BOARD OF EDUCATION,

New York City.

GENTLEMEN:—I have been commissioned by the Committee on School Inquiry to investigate the question of delay in the planning and construction of school buildings.

Pursuant to a conversation with your Mr. Snyder and agreeable to suggestion made by him, I am writing this letter requesting any information you may have as to the earliest chronological history of any school building now in the process of designing or erection.

The information sought being as follows—

Date of conception.

Dates of progress from Committee to Committee.

Dates of progress from Architect to Committee.

dealing with dates of transmission and receipt as far as may be obtained from your own files.

Progress through other departments I will endeavor to obtain provided you have not the data at hand.

Trusting you will favor me with this information, I beg to remain,

Yours very truly,

CHAS. G. ARMSTRONG & SON,

(Signed) CHAS. G. ARMSTRONG.

EXHIBIT "H"

DEPARTMENT OF EDUCATION

CITY OF NEW YORK

No. 25009.

August 8th, 1912.

Subject: Report and schedules.

MESSRS. CHARLES G. ARMSTRONG & SON,

Singer Building, No. 149 Broadway, City.

GENTLEMEN:—Yours of yesterday, signed by Mr. Hallett, in which you say:

"Referring to our conversation of this morning (with Mr. Hallett) in regard to your not having received a letter from Mr. Armstrong requesting certain information, would say that on my return to the office I find a letter in our files under date of July 31st, 1912, copy of which I herewith enclose,"

is received.

The copy of the letter above referred to throws much light on the situation. It is to be regretted that there has been a misunderstanding.

Your having addressed it to the Board of Education, and asked for *data other than that which you requested of me*, and which I cannot furnish, lying, as it does, wholly within the province of the Secretary, who is the custodian of the records of the recommendations of the Local School Boards, Committees and the Board, explains why the letter has not and will not reach me.

I will therefore suspend work on the schedules which you asked for during your call on the 30th ultimo.

Yours very truly,

(Signed) C. B. J. SNYDER,

Superintendent of School Buildings.

Ed. H.
N

355101
New York (city). Estimate and apportionment,
Board of. Committee on school inquiry
Report of Committee on school inquiry.
Vol. 2.

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